



amateur radio

Vol. 34, No. 12
DECEMBER
1966

Registered at G.P.O., Melbourne, for
transmission by post as a periodical

25c

PLASTIC PANEL METERS

P22 2 1/2-inch square. Clear Plastic Case, 1 1/4-inch round mounting hole; 1 1/4-inch deep.	82/6
P22 300 uA. 2.3	P22 1 mA. 37/6
P 25 2 1/4-inch square. Clear Plastic Case, 2 1/4-inch round mounting hole, 1 1/4-inch deep.	82/6
P25 50 uA. 25/6	P25 100 mA. 47/6
P25 100 uA. 55/6	P25 15 volt d.c. 47/6
P25 1 mA. 47/6	P25 300V. a.c. 47/6
P25 5 mA. 47/6	P25 8.5 Meter 99/6
P25 10 mA. 47/6	P25 8.5 Meter 99/6
P25 25 mA. 47/6	P25 VU Meter 75/6
MR1P 1 1/4-inch square. Clear Plastic, 1-inch round mounting hole; 1 1/4-inch deep.	32/6
MR1P 1 mA. 32/6	MR1P 500 uA. 35/6
MR2P 1 1/4-inch square. Clear Plastic, 1 1/4-inch round mounting hole; 1 1/4-inch deep.	55/6
MR2P 30-0-30 uA. 55/6	MR2P 100 uA. 47/6
MR2P 500 uA. 47/6	MR2P 1 mA. 47/6
MR2P 1 mA. 47/6	MR2P 10 mA. 47/6
MR2P 15 amp. D.C. 35/6	MR2P 15 volt D.C. 37/6
MR2P VU Meter 45/6	MR2P Stereo Balance 42/6
MR2P 300-30 amp. D.C. 42/6	MR2P "3" Meter 57/6
MR2P 5 Meter read \$1 to 59 plus 10 to 30 db. FSD 1 mA.)	MR2P 300 volt A.C. 42/6
MR3P 3 x 3 1/4-inch square. Clear Plastic, 2 1/4-inch round mounting hole, 1 1/4-inch deep.	44/6
MR3P 50 uA. 44/6	MR3P 500 uA. 44/6
MR3P 1 mA. 44/6	MR3P 5 mA. 44/6
MR3P 10 mA. 44/6	MR3P 100 mA. 44/6
MR3P VU Meter 44/6	MR3P 300 volt A.C. 44/6

TRANSISTOR RECEIVER KITS

Kits of parts for the Audio and B.I.O. Sections of the 80 Mx Transistor Receiver described in August "A.R." are now available. Audio Kit \$15.50, B.I.O. Kit \$15.50. Kits will be available for subsequent sections as they are published.

BALUN TOROID

Type 355C. Impedance ratio 2:1:1, 33 ohms unbalanced to 25 ohms unbalanced, 3 to 30 Mc. For use at the base of a mobile whip antenna, coupled to feed or adjustable to output impedance. Lug terminals. \$3.50.

NEW TOGGLE SWITCHES

S.P.S.T. 5/- each. D.P.D.T. 10/- each.

CRYSTALS

HCE/U or HC18/U holders.

27.240 Mc., new, \$3.

50.765 Mc., new, \$3.

Frequencies available: 4852, 5860, 4735, 5320, 5750, 4840 and 5397 Kc. Three for \$2.

MR52 2 1/4-inch square. Black Plastic, 2-inch round mounting hole, 1 1/4-inch deep.

MR52 100 uA. 82/6	MR52 500 uA. 47/6
MR52 1 mA. 5 mA. 10 mA. 25 mA. 50 mA. 100 mA. 250 mA. 500 mA. ALL. 82 each	
EW30 Edgewise Meter 2 1/4 x 3 1/4 inch rectangular. Clear Plastic Case, 2 inch deep.	42/6
EW20 1 mA. 42/6	
EW15 Edgewise Panel Meter 1 x 3 1/4 inch face, 3 1/4-inch deep.	42/6
EW15 500 uA. 42/6	EW15 1 mA. 42/6
EW15 500 volt A.C. 42/6	
MR52 2 1/4-inch square face, 2 1/4-inch round hole. Black Plastic Case.	82/6
MR52 500 uA. 82/6	MR52 100 uA. 82/6
MR52 1 mA. 5 mA. 10 mA. 25 mA. 50 mA. 100 mA. 250 mA. 500 mA. ALL. 82/6	
MR52 50 volt A.C. 42/6	MR52 VU Meter 42/6
MO52 3 1/4-inch round, 3 1/4-inch round hole, 1 1/4-inch deep. Black Plastic.	55/6
MO52 500 uA. 37/6	MO52 1 mA. 37/6
MO52 100 Millivolt 37/6	MO52 500 mA. 37/6
MO52 50 Millivolt 37/6	MO52 100 Millivolt 37/6
MO52 15 volt D.C. 35/6	MO52 300 volt A.C. 42/6
MO52 300 volt A.C. 42/6	MO52 1 amp. D.C. 42/6
MO52 30-0-30 D.C. amp. 42/6	

"VU" METERS

Scale: —30—0 plus 3 VU.
6—100% (OVU) at 600 ohms.
Frequency Range: 30—7500 C/S.
Impedance: eq. 300 plus/minus 300 ohms.
Time Constant: eq. 0.3 sec.
(Time for 90% response.)

MR3P VU Meter 43/6	MR3P VU Meter 43/6
MR3P VU Meter 43/6	MR3P VU Meter 43/6
MR3P VU Meter 43/6	MR3P VU Meter 43/6
MR3P VU Meter 43/6	MR3P VU Meter 43/6
MR3P VU Meter 43/6	MR3P VU Meter 43/6

VARIABLE CONDENSERS EDDYSTONE (CERAMIC)

1 1/4 in. shaft.

580 Condenser, 15.5 pF. 2.50	582 Condenser, 15 pF. 2.50
584 Butterfly Cond., 33 x 32 pF. 2.50	586 Condenser, 91 pF. 2.75
588 Condenser, 140 pF. 2.50	617 Transmitting Cond., 370 pF. 3.25

CRYSTAL MICROPHONES

Price only

52/6

Stand to suit

22/- extra.

Packing and Postage 2/6
Model RM3 (illustrated): Response 10-6000 c/s., fitted with 6 ft. cable and phone plug with on-off switch. Can be used on stand for hand use.
RM3 Insert 18/- each

SEMI-CONDUCTORS

TRANSISTORS	GERMANIUM SILICON AND ZENER DIODES
AC107 \$1.20	BA130 45c
AC125/OC70 90c	BT100 \$1.55
AC127 \$1.20	OA5 70c
AC128 90c	OA7 90c
2-AC128 \$2.25	OA7G/OA8E 20c
AD107/OC70 90c	1N34A 90c
AF114N/OC171 90c	OA81/OA81 50c
AF115N 90c	OA82 75c
AF116N/OC170 90c	OA82 75c
AF117N/OC169 90c	OA82 75c
AF118N \$3.50	OA82 75c
AS220/2N270 90c	1N1194/1N1194 15c
AT135/AC126 90c	4001VP/4001VP 15c
AT130 Silicon \$1.00	OA81/100P1V 15c
AT131 Silicon 90c	SIAR2/100P1V 15c
AT132 90c	1 amp. \$1.60
AT133 \$1.00	OA82/1N1193 15c
AT134 90c	OA82 15c
AT135 90c	OA2200 \$1.30
AT136 90c	OA2202 \$1.80
AT137A/OC35 \$3.25	OA2203 \$1.50
BC107 90c	OA2205 \$1.30
BC109 \$1.30	OA2208 \$1.35
BC117 \$1.15	OA2212 \$1.15
OC70 \$1.15	OA2213 \$1.15
OC35/AD149 \$2.25	OA2222/BZ214 \$2.00
OC30 \$4.10	OA2234/BZ216 \$2.00
OC35/AT118A \$3.25	ORP12 LIGHT/SENS 85c
OC44N 90c	1N3184/OA210 85c
OC45N 90c	1N3184/OA210 85c
OC70 \$1.15	1N3491 50P/1V 95c
OC71/2N215 75c	1N3491 95c
Or 3 for \$2.	1N3482 100P/1V \$1.20
OC71 \$1.25	1N3483 200P/1V \$1.30
OC72 \$1.25	1N3483 200P/1V \$1.30
OC74N/AC128 95c	1N3483 200P/1V \$1.30
OC75/AC128 90c	1N3483 200P/1V \$1.30
OC302 \$3.00	1N3483 200P/1V \$1.30
3N217 95c	1N3483 200P/1V \$1.30
3N217/8 95c	1N3483 200P/1V \$1.30
3N270/ASZ30 90c	1N3483 200P/1V \$1.30
3N272 \$1.75	1N3483 200P/1V \$1.30
2N416 85c	1N3483 200P/1V \$1.30
2N278 Delco \$3.00	2N416/OC44 75c
	75c or 3 for \$2.00.

CHASSIS—ALUMINIUM

Type 1 3 in. x 3 in. x 3 in. 75c	Type 2 4 in. x 4 in. x 4 in. \$1.00
3 in. x 3 in. x 3 in. 75c	4 in. x 4 in. x 4 in. \$1.00
4 in. x 4 in. x 4 in. \$1.00	5 in. x 5 in. x 5 in. \$1.25
5 in. x 5 in. x 5 in. \$1.25	6 in. x 6 in. x 6 in. \$1.50
6 in. x 6 in. x 6 in. \$1.50	7 in. x 7 in. x 7 in. \$1.75
7 in. x 7 in. x 7 in. \$1.75	8 in. x 8 in. x 8 in. \$2.15
8 in. x 8 in. x 8 in. \$2.15	9 in. x 9 in. x 9 in. \$2.45
9 in. x 9 in. x 9 in. \$2.45	10 in. x 10 in. x 10 in. \$2.92
10 in. x 10 in. x 10 in. \$2.92	

VERNIER DIALS

Ratio 10 to 1. Reduction scaled 0-10.

Type T 501 1 1/4 in. diam. \$1.75	T 502 3 in. diam. 2.80
T 503 3 in. diam. 2.60	

ROBLAN BROADCAST GANGS

RMG1 Single Gang, 10-50 pF. \$1.52	RMG1 Single Gang, 10-415 pF. 1.85
RMG2 2 Gang, 10-415 pF. 1.50	RMG3 3 Gang, 10-415 pF. 3.35

(Pack and Post 20c.)



RADIO SUPPLIES

5A MELVILLE ST., HAWTHORN, VIC. Phone 86-6465
8 PARK STREET, GLENFERRIE, VIC. Phone 81-1935

North Balwyn tram passes corner.

Money Orders and Postal Notes payable North Hawthorn P.O.

We sell and recommend Leader Test Equipment, Pioneer Stereo Equipment and Speakers, Hitachi Radio Valves and Transistor Radios, Kew Brand Meters, A. & R. Transformers and Transistor Power Supplies, Ducon Condensers, Welwyn Resistors, etc.

"AMATEUR RADIO"

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA FOUNDED 1910

DECEMBER 1966

Vol. 34, No. 12

Editor:

K. E. Pincott VK3AFJ

Assistant Editor:

K. M. COCKING VK3ZFQ

Publications Committee:

G. W. Baly (Secretary) VK3AOM
A. W. Chandler (Circulation) VK3LX
E. C. Manifold VK3KM
W. E. J. Roper VK3ARZ

Drugsmen:-

Ken Gillespie VK3GK
Clem Allen VK3ZFQ
Ian Smith 36 Green St., Noble Park

Advertising Enquiries:

C/o. P.O. Box 36, East Melbourne, C.S. Vic.
or
Mrs. BELLARS, Phone 41-5535, 439 Victoria
Parade, East Melbourne, C.S. Victoria. Hours
10 a.m. to 3 p.m. only.

Publishers:

VICTORIAN DIVISION W.I.A.,
Reg. Office: 478 Victoria Pde., East Mel-
bourne, C.S. Victoria.

Printers:

"RICHMOND CHRONICLE" Phone 48-2418.
Shakespeare St., Richmond, E.I. Vic.

★

All matters pertaining to "A.R." other
than subscriptions, should be addressed to:

THE EDITOR,

"AMATEUR RADIO,"

P.O. BOX 36,
EAST MELBOURNE, C.S. VIC.

Acknowledgments will be sent following
the Committee meeting on the second Mon-
day of each month. All Sub-Editors should
forward their articles to reach "A.R."
before the 25th of each month. Any item
received after the Committee meeting will
be held over until the next month. Pub-
lication of any item is dependent upon space
availability, but in general about two
months may elapse before a technical
article is published after consideration by
the Publications Committee.

★

Members of the W.I.A. should refer all
enquiries regarding delivery of "A.R." direct
to their Divisional Secretary and not to
"A.R." direct. Non-members of the W.I.A.
should write to the Victorian Division, C/o
P.O. Box 36, East Melbourne. Two months'
notice is required before a change of mail-
ing address can be effected. Readers should
note that any change in the address of
their transmitting station must, by P.M.G.
regulation, be notified to the P.M.G. in the
State of residence. In addition "A.R."
should also be notified. A convenient form
is provided in the "Call Book."

★

Direct subscription rate is \$3.00 a year, post
paid, in advance. Issued monthly on the
first of the month, January edition excepted.

FEDERAL COMMENT

★

A.O.C.P. EXAMINATIONS

The following letter is of importance to all prospective Amateurs and
S.w.i's. Please note for the future.

Federal Secretary, W.I.A.,

Dear Sir,

As you are aware, following the discussions which took place
on the revision of the Amateur Handbook, it was decided to reduce
the frequency of examinations for Amateur Operators' Certificates
from four to two a year, to be held on the third Tuesday in Feb-
ruary and August, with supplementary examinations on the third
Tuesday in May and November in Section L (Telegraphy).

In the light of developments which have occurred since the
discussions it has now been decided to introduce the new examina-
tion arrangements as from August, 1967. Quarterly examinations
will be held in January and April, 1967, as usual but not in July,
1967. The first supplementary examination in the subject of tele-
graphy will be held in November, 1967.

The selection of August, 1967, for the introduction of the
proposed new arrangements was influenced largely by the period
which was considered necessary for adequate notice to be given to
all interested parties. It is expected that this date should provide
sufficient time also for the Wireless Telegraphy Regulations to be
amended as required and for the new Handbook to be printed
and made available so that the paper on the subject of Regulations
for the first examination to be held under the new arrangements
may be based on the revised rules.

It would be appreciated if you would be good enough to
arrange for the matter to be publicised through the normal
channels of the Institute, please.

Yours faithfully,

C. M. Carroll,

for Director-General.

Federal Council and the Executive of the Wireless Institute of
Australia wish all members the Compliments of the Season and bright
prospects for 1967.

CONTENTS

A Simple Transistor Tester	3	John Moyle Memorial National	
Single Sideband—Power Meas- urements	6	Field Day Contest, 1967	11
How is Your Dial Calibration? ..	7	Prediction Charts for December	
Technical Correspondence:		1966	21
Transceiver Power Supplies ..	5	New Call Signs	13
"The Mode of Power"	3	DX	13
Sideband:		SWL	16
Netting with Transceivers	9	VHF	15
Bad Sideband Signals	9	Youth Radio Clubs	15
A.R.R.L. International DX Com- petition	7	Federal and Divisional Monthly	
W.I.A. DX.C.C.	10	News Reports	17
		Index to Volume 34—1966	24

VACUUM TUBE VOLT METER

"KYORITSU" MODEL K-142
Highly dependable for measurements of voltages from d.c. to r.f. output (db) and d.c. resistance.

A.c. volts: sine wave: 0.1v-1500v, 7 ranges.
Peak-to-peak: 0-4000v, 7 ranges.
Output (db m): minus 20 db to plus 65 db.

Input impedance: 1.4 megohms.
D.c. Volt: 0.1v-1500v, in seven ranges.
Input Impedance: 11 Megohms.

Resistance: 0.3 ohm to 1500 Megohms, in seven ranges.
The K-142 Vacuum Tube Voltmeter uses a P-83 d.c. 200 microammeter and operates from 240 volts 50/60 cycle a.c. mains. Large clearly calibrated meter gives ease of reading.
Price \$24.35 (inc. S. Tax)

TRANSMISSION LINE EQUIPMENT

Formula III. Low-Loss 300 ohm open wire Transmission Line. 100 ft. length, coiled and boxed. Price \$1.15 (inc. S. Tax).
14 gauge hard-drawn Copper Wire for Amateur Antenna Systems. Any length cut. Price: 6 cents per yard (inc. S. Tax).
Porcelain Egg-type Insulators. Price: \$1.65 (inc. S. Tax).

GRID DIP OSCILLATORS

Just out! The transistorised EDDYSTONE "Edometer" type G.D.O. 300 Kc. to 115 Mc. with set of seven plug-in coils. Zenar stabilisation maintains constant performance with falling voltage. Can be used as g.d.o., for resonance checks on tuning circuits, for actual measurement of inductance and capacity. An in-built modulator stage provides use as signal generator for receiver alignment or as a signal source for audio tests. Can be used as absorption wavemeter, heterodyne wavemeter and modulation monitor. Tuning is simplified by geared reduction drive while the clearly calibrated scale permits rapid reading. Meter sensitivity is adjustable. Unit includes jack for Morse key for use as Morse code practice oscillator. No external power source required. Price \$24.75 (inc. S. Tax).

S.W.R. METERS

KYORITSU Model K-108 Standing Wave Ratio Bridge, 1:1 to 1:10 a.w.r. Impedance 50 and 75 ohms. Frequency range 15 to 60 Mc. Includes 0-100 d.c. microammeter. \$20 loc. sales tax.

PUNCHES



WILLIS HAMMER TYPE DIE PUNCHES

WILLIS Hammer type die punches are made to precise sizes for use in industry wherever a clean, round hole is wanted. Designed to punch down to 14 gauge steel. Centre remnant removed with a flick of the hand. Can be used in die press. Special sizes made to order at slight additional cost.

3/8 in.	\$2.40	1-1/8 in.	\$5.00
7/16 in.	\$2.40	1-3/8 in.	\$5.40
1/2 in.	\$2.60	1-3/4 in.	\$7.20
5/8 in.	\$2.60	1-7/8 in.	\$5.00
11/16 in.	\$2.50	2 in.	\$5.40
3/4 in.	\$3.00	2-1/16 in.	\$5.50
13/16 in.	\$3.20	2-1/8 in.	\$5.50
7/8 in.	\$3.50	2-3/16 in.	\$5.60
1 in.	\$3.90	2-1/4 in.	\$5.60
1-1/16 in.	\$4.00	2-5/16 in.	\$5.60
1-1/8 in.	\$4.50	2-3/8 in.	\$12.40
1-1/4 in.	\$5.00	2-1/2 in.	\$11.00
1-3/8 in.	\$5.20	2-3/4 in.	\$12.40
1-1/2 in.	\$5.50	2 in.	\$12.40
1-7/16 in.	\$5.80	2-1/2 in.	\$12.50

Trade Enquiries Invited

A & R TOROID BALUNS

General Specifications: Power rating—Types A, B, C, 200 watts or 400 watts p.p.p., provided the s.w.r. is less than 2:1. Construction—Toroidal ferrite cores, fully encapsulated with epoxy resin and silicon under vacuum. Suitable for use in cold to sub-tropical areas. All except 350C and 350C are provided with antenna insulator support brackets. Balun dimensions approx. 2 in. diam. x 1 in. plus socket and lugs. Weight approx. 3/4 to 4 oz.

Type 355A—Impedance ratio 1:1. 75 ohms unbalanced to 75 ohms balanced. 3 to 30 Mc. For use at centre of a dipole antenna with co-axial cable feed line or at base end with 75 ohm twin line. Co-axial connector is Belling & Lee L404/5 and lug terminals. Price \$3.77 (inc. S.T.)

Type 351A—Impedance ratio 1:4. 95 ohms unbalanced to 300 ohms balanced. 3 to 30 Mc. For use at centre of a folded dipole antenna with co-axial feed line or at base end with 300 ohm twin line connector and terminals as 350A. Price \$3.77 (inc. S.T.)

Type 352A/BC—Details as 350A except frequency range 800 Kc. to 3 Mc. or to 30 Mc. for receiving purposes only with increased attenuation. Price \$3.77 (inc. S.T.)

Type 353B—This is a type 350 with a co-axial socket SO-239 (Amphenol screw type). Price \$4.89 (inc. S.T.)

Type 354B—Type 351 with SO-239 co-axial socket. Price \$4.89 (inc. S.T.)

Type 355C—Impedance ratio 2:1. 52 ohms unbalanced to 25 ohms balanced. 3 to 30 Mc. For use at the base of a mobile whip antenna, coupled to fixed or adjustable transmitter output impedances. Lug terminals. Price \$5.48 (inc. S.T.)

Type 356C—Impedance ratio 3:1. 75 ohms unbalanced to 25 ohms balanced. 3 to 30 Mc. Lug terminals. Use as 355C. Price \$5.49 (inc. S.T.)

WM. WILLIS & CO. PTY. LTD., 430 Elizabeth Street, Melbourne, C.1, Vic. Phone 34-6539

FOSTER DYNAMIC MICROPHONES

SPECIFICATIONS:

Output Impedance 50 ohms or 50K ohms
Effective output level -55 db. [0 db. - (one) 1V. Microbar]

Frequency response 50 to 15,000 c.p.s.

OMNI-DIRECTIONAL DYNAMIC:

Plastic Diaphragm.

Size: 4 1/2" long, 1 1/2" diameter.

Cable: 12 ft. of P.V.C.

Swivel fits 5/8" 28 t.p.i. Stands.

Colour: TWO-TONE GREY.

Retail Price 50K ohms: £4/16/0 + Sales Tax 10/0

Retail Price 50 ohms: £4/14/0 + Sales Tax 9/0

A QUALITY PRODUCT FOR TAPE RECORDERS & P.A. USERS

Marketed by

ZEPHYR PRODUCTS PTY. LTD.

70 BATESFORD STREET, CHADSTONE, S.E.10, VIC.

Manufacturers of Radio and Electrical Equipment and Components

Agents: D. K. Northover & Co.; Neil Muller Ltd.; Homecrafts (Tas.) P/L; Jacoby, Mitchell & Co. P/L; T. H. Martin P/L.



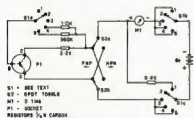
DF-3

A SIMPLE TRANSISTOR TESTER

ROY PROWSE,* VK3XY

The transistor field has made great strides in the last several years and their use has become widespread. The practical application of these devices is increasing in the Ham shack, as is evidenced by the number of Hams who are using transistorised equipment both commercially manufactured and home-built.

The author has been experimenting with various transistor applications for the last few years and were it not for the fact that the junk box—a product of some 30 years' Hamming—holds many tubes and tube circuitry components, transistorised equipment would be used exclusively. However, the pocket-book dictates that the junk box be used wherever possible. When this is not possible then transistors are used and in this regard the cost is much less when compared with tubes and their circuit components. Also, metalwork requirements are considerably less.



SIMPLE TRANSISTOR TESTER

This experimentation has revealed that the spread of characteristics between transistors of the same type is sometimes quite large, and it quickly became apparent that to achieve the best results only the best of the type to be used should be procured. Also, a method was required for confirming the continuing serviceability of these devices, both PNP and NPN, which had been used again and again in various experimental circuits.

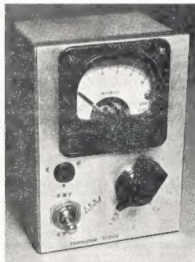
The answer, of course, is a transistor tester, but have you seen the price? Therefore, a tester was required which would provide the answers the author wanted at little cost and the box described is the simplest method the author could find of achieving this requirement, and the instrument has proved invaluable. Readers may be interested in the box which can be built from scratch for a few dollars, the only item which could be considered as expensive being the meter. The box will, of course, not read all required parameters but for a simple "go no-go" device it has been found to be all that is required.

Incidentally, use of the box in a dealer's premises has produced many looks of amazement but the desired result has been achieved in that some transistors for which the dealer wanted good money were not acceptable to

the author. Only the best of the particular type wanted were taken and it can only be presumed that those that were not acceptable were sold to other experimenters and placed into use with not always the desired results being achieved.

The circuit and physical make-up of the tester is shown in the accompanying diagram and photograph. The box used is the familiar BC1366 from disposal sources and which was referred to in a previous article by the author. All components in the box are removed and the only item which is re-used is the switch which is re-located, and re-wired as shown. The other items used are shown in the parts list.

Study of the circuit diagram will show that S2 selects the correct applied voltage polarity for either PNP or NPN type transistors, and that S1 has five positions. For those who do not know the BC1366, position No. 1 of this switch is a spring-loaded position from No. 2 position, and the switch must be physically held in No. 1 position to register. This position is used to test the battery voltage by placing the 6.8K resistor in series with the meter and the battery. It is not essential of course that this type switch be used—any 3-pole, 5-position switch will do.



Position No. 2, as shown, is the OFF position. Position No. 3 tests emitter-collector leakage (with the base floating), and it has been surprising to find how high this can be in many allegedly high quality transistors. However, due regard must be given, of course, to the effect that a rise in temperature can have on this parameter. Positions Nos. 4 and 5 read the common-emitter forward d.c. current-transfer ratio (beta or H_{FE}), which of

course will also be subject to temperature effects, particularly with germanium types.

Positions Nos. 4 and 5 read respectively up to a maximum H_{FE} of 200 and 100. For example, on the X200 range position a reading of 0.4 mA. equals a d.c. beta of 80.

If this article stimulates your interest in transistors, then one of the aims of the author has been achieved. There are many bargains available in the transistor field and this tester will allow you to make a reliable selection of the good from the not so good, and more important still, to reject the bad, of which there are many about. A little experimenting with these devices and, like the author, you will say goodbye to tubes, pocket-book permitting. The safety factor alone warrants their use—think of the low operating voltages involved. No need to keep one hand in the pocket in the time-honoured way, which is not always successful.

★

Technical Correspondence—

"THE MODE OF POWER"

Editor "A.R.," Dear Sir,

On page 3 of the October issue of "A.R." appears an article on a 240v. a.c. power supply by B. A. White, VK5YB.

In the last paragraph he credits me with "the mode of power".

I would be pleased if, in a subsequent issue, you would correct this statement. It is true that Barry VK5YB saw the power plant which I made up and have been operating successfully for very many years. However, I myself gained the information from an article published in the June 1956 issue of the American publication "CQ" and which was loaned to me by Wally Green, VK6WG.

The article in "CQ" also contained additional information and circuits of alternative methods of excitation which might be of interest to other readers. Unfortunately I have no complete copy of the article. However, knowing that there is another published article could be of some assistance to those who desire to go further into the matter.

I would add that the control box containing the condensers and switching can be located at the load or operator's end of circuit. This is a decided advantage since the power unit can be placed at a distance from the operator, so reducing the exhaust noise of the prime mover. The scheme's biggest advantage appears to be that, apart from the ignition noise from the spark plug (and which is as easily suppressed), it is electrically noise free.

—Rolo Everingham, VK6BO.

AMATEUR FREQUENCIES:

USE THEM OR LOSE THEM!

* 25 Brewers Rd., Bentleigh, Vic.



**WARBURTON
FRANKI**

XMAS BARGAINS

TRANSISTOR TRANSFORMERS

ROLA LDR 43: 4300/600 ohms c.t.

25c each + 25% S.T. plus pack and post 5c.

A & R TO9 and TD5: Set of output and driver transformers. Impedance: TO9—375 c.t./3.5 ohms; TD5—3000/1800 ohms c.t.

75c pair + 25% S.T. plus pack and post 5c.

POWER TRANSFORMERS

A & R Type 51113: 250 volts a side at 80 mA. and 6.3 volts at 4 amp.

\$1.50 + 25% S.T. plus pack and post 25c.

A & R Type 2005: 180 volts a side at 40 mA. and 12.6 volts at 1 amp.

\$1.00 + 25% S.T. plus pack and post 20c.

SPEAKER TRANSFORMERS

A & R Type 2655: Size E, 5000-33 ohms.

50c + 25% S.T. plus pack and post 5c.

TRANSCEIVERS

Three transistors, range up to $\frac{1}{2}$ mile, depending on terrain. Supplied complete ready to use with telescopic antenna and batteries.

\$17.35 set of 2 + 12 $\frac{1}{2}$ % S.T. Also 5 transistor model

\$23.50 set of 2 + 12 $\frac{1}{2}$ % S.T. And 9 transistor model

\$53.85 set of 2 + 12 $\frac{1}{2}$ % S.T.

FILAMENT TRANSFORMERS

Double wound. 15 volts at 500 mA.

75c + 25% S.T. plus pack and post 10c.

RECTIFIERS

Bridge type. Contact cooled. Up to 20 volts at 1.5 amp.

95c + 12 $\frac{1}{2}$ % S.T. plus pack and post 5c.

SILICON DIODES

IN3491: 18 amps. at 50 p.i.v. Available with either K or A to case, 75c plus S.T. 12 $\frac{1}{2}$ %.

Heat Sink Adaptors to suit, 25c plus S.T. 12 $\frac{1}{2}$ %.

510A2: 1 amp. at 1,000 p.i.v. **\$1.20** plus S.T. 12 $\frac{1}{2}$ %.

515A2: 1 amp. at 1,500 p.i.v. **\$2.00** " " "

IN3193: 750 mA. at 200 p.i.v. **40c** " " "

IN3194: 750 mA. at 400 p.i.v. **55c** " " "

IN3195: 750 mA. at 600 p.i.v. **75c** " " "

LOUDSPEAKERS 4"

Available in 3.5, 8 or 15 ohms impedance.

\$1.50 + 25% S.T.

DIAL LAMPS

6-8 volts, M.E.S. tubular. Box of 10—

35c + 25% S.T. plus pack and post 5c.

BELPHONE

INTERCOMM. SYSTEMS

Comprises two Handsets (similar P.M.G. telephone) and connecting wire. Very clear reproduction. Loud bell to call.

\$8.65 set (inc. batteries) + 12 $\frac{1}{2}$ % S.T.



WARBURTON FRANKI

220 PARK ST. SOUTH MELB., VIC. PHONE 30 lines 69-0151



**OPEN SAT.
MORNING**

Please include
postage or
freight with
all orders

Transceiver Power Supplies

Editor "A.R.," Dear Sir,

The comments of Phil VK5NN and Lee VK7RG in "A.R." for July and September are very much to the point.

Many Amateurs long to own a piece of American-made equipment and will refuse to buy a locally made product. In some cases this is justified because the Australian maker may have failed to supply a reliable product, however, this aversion to the local product is often unjustified and many local manufacturers have demonstrated their ability to design and construct high quality equipment.

We must not lose sight of the fact that there are, in fact, three markets in Australia. Firstly, there is the "consumer product" market—Radio, T.V. etc. Then follows the "professional or capital equipment" market—this requires an entirely different design approach to cater for the much higher reliability required by people who depend upon these devices to provide saleable services. Professional engineers usually make the purchasing decisions and equipment is installed and maintained by qualified engineers and technicians. The third is the "military market." Here the demand is for very reliable equipment capable of operation under the most arduous conditions.

As the demands made upon the equipment increase, so the cost rises. It may also rise because the quantity required is quite small.

Australian Amateurs, as a class, have become used to using equipment made mostly for the military market demand somewhere between the consumer product and the professional equipment market. Equipment must be inexpensive and reasonably reliable, but, no service of vital importance will fail if the equipment does not work and so the "over-running" of certain components such as final tubes is justified.

Many years in the electronic field leads me to believe that at least one area where the Australian product is definitely superior is power supplies. The main reason for this is that supplies made in Australian factories are designed for operation from 240 or 250 volts c.p.s. a.c. and not 110/220 or even 117/234. American supplies are usually designed for 117v. 60 c.p.s. and will in many instances run hot on 50 c.p.s.

My criticism in the case of transceiver supplies is not that they run hot, but that they supply voltages which are considerably in excess of the absolute maxima listed by the tube makers in equipment where the tubes are already being run beyond their normal limits. The National NCX-A power supply is rated to supply 700v. d.c. at 300 mA, 280v. d.c. at 200 mA, plus bias and filament voltages. It performs satisfactorily without overheating and will handle an a.c. input of plus or minus 10% without distress. The dynamic regulation is quoted as 2%. But what of the equipment voltages under these conditions of high line voltage?

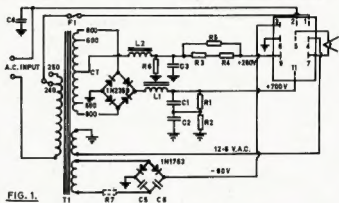


FIG. 1.

- C1, C2—30 μ F, 450v, whg.
C3—40 μ F, 450v, whg.
C4—0.01 μ F, 600v, D.C.W.
C5, C8—20 μ F, 150v.
R1, R2—4 x 7.5 k ohms 10w, w.w. in series.
*R3, *R4—330 ohms 10w, w.w.
R5—680 ohms 10w, w.w.

- *R7—Value to be decided on test (50-500 ohms).

Table 1 lists the readings I have obtained. (Voltmeter AVO Model 8, checked at better than 1% on all ranges.) From these figures it can be seen that the static regulation between an e.h.t. load of 50 mA. (s.s.b. idling) and full plate current of 300 mA. is 720×100 , equals 10.7% (approx.) on the 234v. input figures. This is very good indeed under static conditions and is due very largely to the low resistance of the transformer and chokes. With an e.h.t. filter capacitance of 40 μ F. one could expect that the claimed dynamic regulation figure of 2% will be achieved.

a.c. input voltage	700 volt line			200 volt d.c. line		Bias	Heater a.c.	a.c. Tot.
	no load	50 ma.	300 ma.	idling	full o/p			
258	900	790	750	310	306	-82	13.7	plus 10%
250	870	769	720	300	290	-80	13.3	plus 6%
234	820	720	680	282	272	-75	12.5	Nominal
220	770	675	640	270	260	-70	11.8	minus 6%
210	735	645	610	255	245	-67	11.2	minus 10%

When the heater voltage was adjusted to read 12.6v. other readings as follows:

236	830	730	690	285	275	-76	12.6
-----	-----	-----	-----	-----	-----	-----	------

Table 1.

To me the frightening thing about these measurements is that the voltages exceed the tube manufacturers' ratings long before the equipment makers' tolerances are exceeded. Even under conditions of maximum voltage the power supply continued to run "cool" after a considerable period of operation.

A number of Amateurs using equipment of similar type, but not necessarily of the same make, have reported that the final tubes became gassy after a short period of operation. When one considers that many of the tubes used by U.S. manufacturers in their s.s.b. equipment are not readily obtainable in Australia and may cost up to about \$8 or \$10 per pair (with tax), it can be seen that the use of long aging periods, such as 100 hours, is a very important factor for a type of operation which will permit the final tubes to give of their best for longer periods. Remember that if your final voltage is 800v, and

they idle at 50 mA. (2 x 6JB6's or similar), the plate dissipation is 40 watts.

Because of this feature of the use of American supplies, it has been decided to design Australian-made supplies which will meet the requirements of such transceivers and permit operation at the full rated 200w. (p.e.p.) input or a lower figure of about 120 watts, by simply changing secondary taps.

Australian Amateurs can purchase basic kits consisting of a transformer and two chokes for a modest sum and complete power supplies are available at prices which are about half that of an imported supply. The transformers are provided with primary taps at 240 and 250 volts to cater for the line conditions usually encountered in Australia.

S. T. Clark, VK3ASC.

AMATEUR FREQUENCIES:

ONLY THE STRONG GO ON—
SO SHOULD A LOT MORE
AMATEURS!

SINGLE SIDEBAND-POWER MEASUREMENTS

Following the discussions carried on over the past year with the Postmaster-General's Department on the subject of single sideband power levels and methods of measurement, Federal Executive of the W.I.A. have received the following letter from the Department. It sets out quite clearly the allowable power and acceptable method of measurement, both of which are fully endorsed by the Institute.

The concept of listing acceptable commercial equipment is an extremely practical one and should be of assistance to all concerned. This first list does not presume to be exhaustive and suggestions from all Amateurs for additions to it would be welcomed.

Such suggestions should be sent to the Federal Secretary, W.I.A. (P.O. Box 2611W, Melbourne, Victoria), and not to the Department. Inclusion of photostat copies of the maker's specifications and recommended operating conditions will be of great assistance in negotiating approval.

Additions to the list of approved equipment will appear in "A.R." as and when such approval is obtained.

—H. L. Hepburn,
Federal Vice-President,
W.I.A.

Federal Secretary, W.I.A.,
Dear Sir,

As discussed previously in connection with the use of single sideband equipment, forwarded herewith is a list of equipment types which the Department is prepared to accept as meeting the 400 watt. p.p. power output limitation when operated in accordance with the maker's specification.

B. & W.:
6100

Central Electronics:
*200V
*10A
*600L

Collins Radio:
*32S1
*32S3
*KWM1
*KWM2

R. L. Drake and Co.:
*TR4
*TK4
*TR3

Dynalab Co.:
HW12
HW22
HW32

E.I. Co.:
757
*753

Hallcrafters:
HT46
SR150
SR160
*HT44
*SR500
*SR32B
*HT37

Hammarlund:
HX500
*HX50
*HX50A

Heathkit:
SB110
*HW12
*SB100
*SB400

E. F. Johnson:
Viking 200
Vallant 500
Courier
Invader

Lafayette:
HA250 (linear amplifier)

National:
NCX3
NCX5

R.F. Communications:
RF301

Swan Electronics:
120
*350
*400

Transcon Electronics:
SBT-3

KW Electronics:
*KW600L
KW2000
KW2000A

World Radio Laboratories:
Duobander 84
*Galaxy III.
*Galaxy V.

Yaesu Musen:
FL100
FL200
*FL1000

* This equipment must be modified in such manner as to preclude operation with input power in excess of 150 watts to the final transmitter stage when employed for type A1 emission.

In those cases where it becomes necessary to make a measurement of the peak envelope power, the following method shall be employed.

Apply two non-harmonically related sinusoidal tones of equal amplitude to the single sideband transmitter which is operating into a matching resistive dummy load and an appropriate r.f. current meter. With an oscilloscope connected across this load, the transmitter with the carrier fully suppressed is adjusted for maximum power output coinciding with linear operation as indicated visually on the oscilloscope.

The power output is then calculated by the formula:—

$$P_m = I^2 R$$

where P_m = mean power in watts.
 I = r.f. current in amps. flowing in the dummy load.
 R = resistance of the dummy load in ohms.

The resultant figure, being mean power, is doubled to give peak envelope power and this value must not exceed 400 watts.

Your comments on the above measuring method and advice of other types of equipment which might meet requirements would be appreciated in due course, please.

Yours faithfully,
C. M. Carroll,
for Director-General.
★

CONTEST CALENDAR

10th Dec. to 15th Jan.—Ross A. Hull Memorial Trophy V.h.f. Contest.
4th/5th Feb.—33rd A.R.R.L. International DX Competition (phone).
11th/12th Feb.—John Moyle Memorial National Field Day Contest.
18th/19th Feb.—33rd A.R.R.L. International DX Competition (c.w.).
4th/19th Feb.—A.R.R.L. Novice Round-up.

WIRELESS INSTITUTE OF AUSTRALIA FEDERAL EXECUTIVE

The Institute can now offer annual subscriptions to the following Amateur Journals:

- ★ "QST"—Associate membership and renewals, \$5.40.
- ★ R.S.G.B.—"The Bulletin" is only sent with membership of the Society. Send for application form and FREE sample copy of the R.S.G.B. "Bulletin," \$5.95.
- ★ "CQ" Magazine, \$5.20.
- ★ "73" Magazine, \$3.50.

R.S.G.B. Publications and A.R.R.L. Publications available.

Send remittance to Federal Executive, C/o. Box 36, G.P.O., East Melbourne, C.2, Vic.

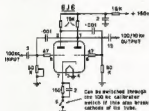
HOW IS YOUR DIAL CALIBRATION?

BILL MAGNUSSON,* VK3AHT

Not many years ago the person who had a 100 Kc. crystal calibrator was indeed fortunate. Today, however, a commercial receiver or transceiver which does not include this facility would be difficult to find. Such is progress. That which was once considered an accessory is now a normal functional part of the equipment. We refer to it constantly; to check calibration, meet skeds, give frequency checks, etc. But is it enough? How many times have you wondered as I did, "Just how accurate is the dial read-out or interpolation within these 100 Kc. check points?"

You may be surprised and probably not agreeably! In all but the most expensive equipment you will find small errors due to non-linearity in the tuning mechanism. True, they may be small, but what's the use of having dial read-out to one Kc. if the calibration is half a Kc. out at some point between the 100 Kc. calibration pips?

After having been accused a few too many times of being off frequency I decided to do something about it. But what? That was the question. A 50 Kc. crystal? Perhaps, but these are specials, very expensive and would probably require circuit modifications. A multivibrator, why not? They'd worked quite well for me in the past. But it had to be simple, the finished unit compact and above all no circuit mods. or holes to be drilled in the parent equipment.



FREQUENCY DIVIDER CIRCUIT FOR CALIBRATOR

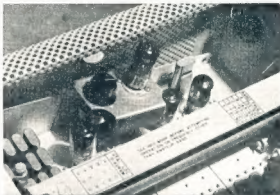
The little unit to be described filled all requirements admirably. There are no critical components, it can be constructed on a small panel 1 1/2 in. by 2 1/2 in., hardly bulky, which can be tucked away between a couple of valves and bolted to a suitable hole (there are usually plenty). Circuit connections are simply a matter of borrowing power from the parent equipment.

Basically this is it. The 100 Kc. calibrator output is used to lock a frequency divider at its 10th harmonic. The output, containing undiminished 100 Kc. and very slightly weaker 10 Kc. check points, is fed back to the receiver via a small coupling capacitor.

* 350 Williamstown Rd., Yarraville, Vic.

CIRCUIT

This is quite standard and was gleaned from a R.S.G.B. article of some years ago where it was actually one stage of a more pretentious frequency sub-standard. It contains no tricks and should work first time. The tube can, of course, be virtually any twin triode but the 6J6 is ideal. The switched cathode connection is necessary to prevent hash from being generated by the multivibrator when drive is not present from the 100 Kc. source.



CONSTRUCTION

This will depend on the availability of space in the parent equipment. As can be seen in the circuit and the photograph, the only components of any size are the tube and the pot. These therefore make up most of the total bulk of the unit.

The photograph will give an idea of the size of my own unit which is fitted to the 75S-1 receiver.

ADJUSTMENT

- (1) Identify two adjacent 100 Kc. check points and calibrate the dial.
- (2) Slowly advance the pot. from the earthy end while rocking the receiver dial back and forth around the 50 Kc. mark midway between the two previously identified 100 Kc. pips.
- (3) At approx. mid scale on the pot. a signal will be heard which should zero at 50 Kc.
- (4) Leave the pot. and count the number of signals between the two 100 Kc. pips. There should be nine. If not, advance or retard the pot. until nine pips can be counted.
- (5) The final setting can be obtained by tuning in one of the 10 Kc. pips and then slowly rotating the pot, first one way and then the other, until the divider drops out of sync. The correct adjustment is approx. half way between these points.

I used a panadaptor to set mine and this considerably simplifies the adjustment as the number of pips can be counted directly from the c.r.t. display.

OPERATION

Once adjusted the unit is perfectly stable and the note at each 10 Kc. point is T9. Output is quite usable to 30 Mc., the 10 Kc. pips being about S2 at this frequency.

Used in conjunction with a receiver which has direct one Kc. readout on the dial, it should now be possible to hit a specified frequency within ± 100 cycles. This is quite good accuracy, indeed, to achieve any greater degree one would require equipment much more costly than the couple of dollars outlay for the above unit.

— . . . —

A.R.R.L. INTERNATIONAL DX COMPETITION

Amateurs throughout the world are invited to participate in the 33rd A.R.R.L. International DX Competition. Special certificates of performance will be issued to the top phone and c.w. scorers in each country. In addition, a handsome plaque will be awarded to the continental high scorers (non W/V/E), single operator, on phone and on c.w.

Dates: Phone—Feb. 4-5, March 4-5, 1967. C.W.—Feb. 18-19, March 18-19, 1967. Times: 0001 G.M.T., Saturday, to 2400 G.M.T., Sunday.

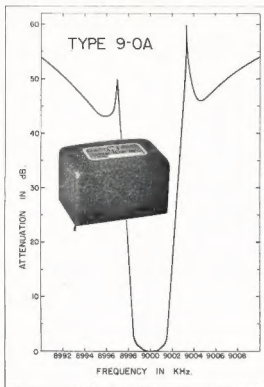
Object: DX stations QSO as many continental U.S. and Canadian stations as possible. Repeat contacts on additional bands are permitted.

Points: Each complete contact counts three points, incomplete contacts count two points.

Exchange: Send RS(T) and input power. (The W/V/E will send RS(T) and his State/Province.)

Multipliers: On each band, your multipliers are the 48 continental U.S. States plus V-E-V-E-S and VO. Your final multiplier is the sum of multipliers worked on each band. QSO points times the final multiplier equals the final score.

Logs: Logs must contain dates, times in G.M.T., bands, exchanges and points. Logs, with summary sheet and multiplier check list, must be sent to A.R.R.L. no later than April 22, 1967. Send to: A.R.R.L. International DX Competition, 225 Main St., Newington, Connecticut, U.S.A. 06111.



NEW! DESIGNED AND PRODUCED
IN AUSTRALIA

Pye 9 Mc. Crystal Filter Unit

TYPE 9-0A FOR S.S.B. TRANSMITTERS

To satisfy an ever-increasing demand for a filter suitable for s.s.b. transmitting purposes, Pye engineers have developed the Type 9-0A which is now in production at our Crystal Division.

This filter, supplied with two Style "D" carrier frequency crystals and sockets, comprises a package unit. With each unit a typical schematic circuit diagram is supplied.

Specifications: 6.0 dB Bandwidth: 3 Kc. min.
40 dB Bandwidth: 6 Kc. max.
Pass Band Ripple: 2 dB max.
Insertion Loss: 4.5 dB.
Input Termination 150 ohms plus 150 pF.
Output Termination: 150 ohms plus 120 pF.
Physical Dimensions: 2" x 1.375" x 1.125".

Recommended Oscillator Crystals: 8998.0, 9002.0 Kc.

Price each package unit – \$30.00 plus tax

Quantity discounts will be negotiated.

Close Tolerance Gold Plated Crystals for Amateur Applications

Amateur Net
(each includ. Tax)

★ 1.8 Mc. to 14.999 Mc. \pm 0.005%.	In Style "D" Holders, $\frac{1}{2}$ " pin spacing	\$4.85
★ 15.0 Mc. to 47.999 Mc. \pm 0.005%.	In Style "D" Holders, $\frac{1}{2}$ " pin spacing	\$5.05
★ 48.0 Mc. to 61.0 Mc. \pm 0.005%.	In Style "D" Holders, $\frac{1}{2}$ " pin spacing	\$5.65
★ 100.0 Kc. \pm 0.005%.	In Style HC13/U Holders, $\frac{1}{2}$ " pin spacing	\$9.00
★ 1.0 Mc. \pm 0.005%.	In Style "D" Holders, $\frac{1}{2}$ " pin spacing	\$9.00

Many other types and tolerances are available from our standard production.

Please consult us on your Crystal requirements.

PYE PTY. LTD.

MELBOURNE:	P.O. BOX 105, CLAYTON	Phone 544-0361
BRISBANE:	97 MERIVALE ST., SOUTH BRISBANE	" 4-1571
SYDNEY:	59 ARUNDEL ST., FOREST LODGE	" 68-4111
ADELAIDE:	1 IFOULD STREET, ADELAIDE	" 23-3979
PERTH:	151-155 BRISBANE STREET, PERTH	" 28-4338
HOBART:	141 MURRAY STREET, HOBART	" 3-3707

SIDEBAND

Sub-Editor: PHIL WILLIAMS, VK6N

Main observations on the single sideband front this month have been the extensive use of this mode during the week-end of the "CQ" World-Wide DX Contest—phone section, and the Boy Scouts' Jamboree-on-the-Air, both of which happened to fall together. The organisers of both of these had better get together and arrange different week-ends in future, as I heard so many people say that they would have liked to have been in both, but, of course, a prior arrangement with the Scouts precluded participation in the DX Contest.

The Jamboree is now a well established feature of the Scout calendar throughout the world, and the number of sideband transceivers operating in Scout Halls, with antenna systems erected by the boys was commendable. These small transceivers lend themselves to this type of portable operation very readily. A pleasing feature this year was the large participation by Girl Guides. There appeared to be many more groups of girls on the air this year, and they were very good operators, too.

Since the Jamboree I have had numerous enquiries from Scouts regarding the methods of studying for the exam and obtaining a licence, and these laid will certainly make good Amateurs.

NETTING WITH TRANSCEIVERS

One hears many discussions on the air (and complaints) regarding netting and tuning up, especially the problems encountered with transceivers. The following points should be remembered and scrupulously observed:—

- (a) Tune the station in carefully until you consider that the voice sounds natural—not just intelligible.
- (b) After you have netted as well as possible, do not proceed to tune up the transmitter on the net frequency before you call.

It has been established that a male voice is intelligible with carrier insertion anywhere between minus 200 and plus 500 cycles per second from the correct frequency required for natural voice reproduction. While writing this I am listening to two VK3 stations, both using transceivers, using break-in with vox control, and about 200 c.p.s. apart. To me, one sounds quite natural and the other rather higher pitched, but both are perfectly intelligible. However, if I make the latter station sound normal—and I know his normal speaking voice, then the first station sounds anything but normal—quite ghastly, in fact.

I can only wonder whether my friend's transceiver oscillators are changing frequency between transmit and receive modes—this is possible—or whether he is just not very fussy about

tuning in. This oscillator frequency changing can sometimes occur with very strong signals actuating the a.c., and it is a good plan to check the oscillators, both crystal and v.f. types, on a separate receiver, if you are constantly receiving complaints about your netting and your procedures are apparently correct in other respects.

And now, on the subject of tuning up your transmitter or transceiver on a net frequency. I can only ask that you move to a clear spot on the dial to tune up, or preferably, and as stated in the Handbook for the Guidance—using a dummy serial, the most satisfactory of which is a large non-inductive resistor. Many of the antenna tuners, "match boxes," or whatever they may be called, have a 50 ohm load built into them and this makes the job very simple.

Some transmitters and transceivers use an audio oscillator to provide a signal into the audio amplifier on

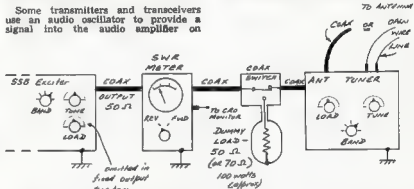


Fig. 1.—Set-up to give correct loading impedance to an s.b. exciter (or amplifier).

transceiver. This system of tuning up is quite good, but we must warn operators that, for example, the 1000 c.p.s. audio tone, if put on top of another net, can cause complete dislocation of the net and I sometimes wonder at the tolerance of net operators when they welcome (?) a new operator into the net after he has just tuned up for half a minute "bang" on top of the net stations.

I can only say, that if you do not possess a dummy load, then please move to a clear channel, or park on top of another source of noise (there are some infernal machines left running in the Amateur bands, and you can tell from the sound of them just what they are or are not doing) in order to get your tuning done. This subject is treated at some length, because I am quite sure some operators think they are putting out a "carrier" frequency, zero-beating with other (absent) carriers on the net, and therefore causing no interference.

BAD SIDEBAND SIGNALS

Yes, there are plenty of them, and you'll hear more of them around as more stations come on. The causes are numerous, but I shall list some of the common causes here, in the hope that it may help the unfortunate sidebander who gets the thumbs down sign from his fellow Amateurs.

"Audio gain too high" is the commonest complaint of all, especially for the newcomer to sideband, who is anxious to get amongst the DX and does not watch either the meters or his enthusiasm, when working the weak, rare ones. The tendency to climb into the mike should be watched, and a "weather-eye" kept on the plate meter or output meter at all times. These should kick up to about half of the peak c.w. readings on test, when you speak. The handbooks usually tell you all about this and owners of commercial gear should read them carefully. The monitor oscilloscope is a very good monitor, and infallible in detecting flat-topping whatever the cause.

Incorrect loading of the transmitter is another frequent cause of broad distorting signals and even those exciters with variable loading controls should normally be adjusted using an a.w.r. meter followed by an aerial tuner. The improvements are quite amazing where

the aerial s.w.r. is high, as even if proper matching is possible, the resulting low or high Q of the output circuit may cause some queer results. The aerial tuner, Z-match, match box, a.c.u.—call it what you like—will make sure your final is presented with its correct load on the pi output tuned circuit. Linear amplifiers must be correctly loaded, otherwise spurious emissions may occur, even including parasitic oscillations at near output frequency. Sudden troubles with previously tame installations often result from broken aerials or feeders, for which the remedies are obvious. The s.w.r. meter will show up troubles of this sort very quickly.

Parasitic oscillations are diabolical things to cure, and I can only suggest that you be sure to include all the suppressors and chokes when you build and make provision for neutralising all class AB1 or AB2 linear amplifiers. You may operate on 80 and 40 without

(Continued on Page 19)



PRINTED CIRCUITS AID AUSTRALIAN INDUSTRY!

Applications for printed circuits from Precision Windings in industry are growing daily... it's simply amazing how many leading electronic and design engineers specify "Precision Windings" boards. PW's photographic process does have many advantages... small numbers may be manufactured economically... definition and detail are crisp and clear... negatives are readily available for alterations... and tarnishing is prevented by a protective over-coating. Above all the PW process offers quality control at every stage of manufacture. This is why more and more industrial organisations are coming to Precision Windings for up to the minute technical advice and prompt, dependable deliveries.

AND FOR THE HOBBYIST?

Don't worry... we're not neglecting our many friends who want a single circuit board. Send for our free folder on "How to prepare artwork" and for our price list. It matters little if you want one or a thousand boards... PW's price is most attractive. Many "Electronics Australia" designs are kept in stock and delivery is immediate. Special printed circuits are normally dispatched within 7 days of receipt of your artwork. Artwork slides in the form of Solder Lands, Black Crepe Tapes, Clear Film and Transfer Letters are also available from Precision Windings at low cost. Write now!



52 Cambro Road, Clayton, Vic.
Phone 544-7370

SIDEBAND

(Continued from Page 9)

neutralisation, but not on 15 and 10 metres.

R.I. getting into the audio is another common cause of bad signals. This occurs with improperly shielded and filtered microphones and cables, especially where linear amplifiers are in use, and an older crystal microphone is retained in use. Keep the r.f. in boxes and low impedance co-axial cables, properly matched, in the shack, ground all of the equipment, and make sure the mike and its cables are well screened. Early audio stages must be screened and grids by-passed for r.f., and it is worth pointing out that these measures are better carried out while building than having to add them afterwards.

Again I would add, that if you receive a bad report, just accept it in the spirit in which it is given and get the fault repaired, using a dummy load on the transmitter for testing. The oscilloscope and station receiver may be very useful for tracking down such faults.

As a final word of warning—please keep the covers on the linear tube compartment so that you will not kill yourself on the e.h.t. supply to the final plates. A 6146 will stand 800 volts, but the operator probably will not!

Next time I have a few notes on input circuits for grounded-grid amplifier stages. 73, Phil VK3NN.

W.I.A. D.X.C.C.

Listed below are the highest twelve members in each section. Position in the list is determined by the first number shown. The first number represents the participant's total countries less any credits given for deleted countries. The second number shown represents the total D.X.C.C. credits given, including deleted countries. Where totals are the same, listings will be alphabetical by call sign.

Credits for new members and those whose totals have been amended are also shown.

PHONE

VK3AHO	318/322	VK4HR	261/277
VK3MS	326/330	VK3ZZ	253/265
VK3AB	300/314	VK3TL	241/245
VK3MK	296/315	VK3AE	225/237
VK6RU	296/319	VK2AAR	221/225
VK4PJ	273/280	VK2APK	217/230

VK5GX	101/101	VK6XX	110/110
VK4PX	108/108		

Amendments.

VK3SM	117/119	VK3AGH	106/116
-------	---------	--------	---------

C.W.

VK3KR	317/340	VK2AGH	278/280
VK3AE	281/313	VK3AHQ	278/280
VK3RU	281/313	VK3NC	278/280
VK3QL	288/308	VK3ARX	261/269
VK4PJ	288/308	VK6RU	251/272
VK2EO	279/300	VK3XB	246/261

Amendments.

VK3YL	339/356	VK3KS	202/208
VK3RJ	231/244		

OPEN

VK2AE	305/339	VK4HR	278/301
VK2AGH	305/339	VK3ACX	276/306
VK3RU	301/324	VK3ARX	270/273
VK6MK	300/317	VK3NC	287/287
VK4PJ	282/314	VK3JA	285/283
VK3VN	285/300	VK3TL	260/264

New Member

VK4CK	103/104		
-------	---------	--	--

Amendments.

VK2SG	161/165	VK4PX	143/148
-------	---------	-------	---------

BRIGHT STAR CRYSTALS

FOR ACCURACY, STABILITY, ACTIVITY AND OUTPUT



Our Crystals cover all types and frequencies in common use and include overtones, plated and vacuum mounted. Holders include the following DC11, FT243, HC-6U, CRA, BTG, Octal, HC-18U.

THE FOLLOWING FISHING-BOAT FREQUENCIES ARE AVAILABLE IN FT243 HOLDERS:—

6280, 4095, 4535, 2760, 2324 Kc.

5,500 Kc. T.V. Sweep Generator Crystals, \$7.25; 100 Kc. and 1000 Kc. Frequency Standard, \$17; plus Sales Tax.

Immediate delivery on all above types.

AUDIO AND ULTRASONIC CRYSTALS—Prices on application.

455 Kc. Filter Crystals, vacuum mounted, \$13 each plus Sales Tax.

ALSO AMATEUR TYPE CRYSTALS—3.5 AND 7 Mc. BAND.

Commercial—0.02% \$7.25, 0.01% \$7.55, plus Sales Tax.

Amateur—from 56 each, plus Sales Tax.

Regrinds—Amateur \$3, Commercial £3.75.

CRYSTALS FOR TAXI AND BUSH FIRE SETS ALSO AVAILABLE.

We would be happy to advise and quote you

New Zealand Representatives: Messrs Carrel & Carell, Box 2102, Auckland. Contractors to Federal and State Government Departments.

BRIGHT STAR RADIO

LOT 6, EILEEN ROAD, CLAYTON, VIC.

Phone 546-5076

With the co-operation of our overseas associates our crystal manufacturing methods are the latest.



JOHN MOYLE MEMORIAL NATIONAL FIELD DAY CONTEST, 1967

SATURDAY, 11th FEB., 0800 G.M.T., TO SUNDAY, 12th FEB., 0800 G.M.T., 1967

The Federal Contest Committee of the Wireless Institute of Australia invites all Australian Amateur and Short Wave Listeners to participate in this Annual Contest, which is held to perpetuate the memory of John Moyle, whose efforts advanced the Amateur Radio Service.

There are two divisions of this Contest, one of 24 hours continuous duration, and one of 6 hours continuous duration. The six-hour period has been included to encourage the operator who is unable to participate for the full 24-hour period.

Operators using 25 watts or less input to the final stage will be considered for a certificate where his activity warrants its issue.

DATE

From 0800 G.M.T., 11th February, to 0800 G.M.T., 12th February, 1967.

OBJECTS

The operators of Portable and Mobile Stations within all VK Call Areas will endeavour to contact other Portable/Mobile and Fixed Stations in Australia and Overseas Call Areas.

RULES

1. There are two divisions, one of six (6) hours, and one of twenty-four (24) hours duration. The six-hour period for operating may be chosen from any time during the Contest but the six-hour period so chosen must be continuous. In each division, there are six sections:—

- Portable/Mobile Transmitting, Phone.
- Portable/Mobile Transmitting, C.W.
- Portable/Mobile Transmitting, Open.
- Portable/Mobile Transmitting, Multiple Operation, open only.
- Fixed Transmitting Stations working Portable/Mobile Stations, open only.
- Reception of Portable/Mobile Stations.

2. All Australian Amateurs are encouraged to take part. Operators will be limited to their licensed power. This power shall be derived from a self-contained and fully portable source.

(a) Portable/Mobile Stations shall not be situated in any occupied dwelling or building. Portable/Mobile Stations may be moved from place to place during the Contest.

No apparatus shall be set up on the site earlier than 24 hours prior to the Contest.

All Amateur hands may be used, but no cross band operating is permitted. Cross mode operation is permitted.

Entrants in Section (d) for Multiple Operator Stations can set up separate transmitters to work on different bands at the same time. All such units of a Multiple Operator Station must be located within an area that can be encompassed by a circle not greater than half a mile diameter.

For each transmitter of a Multiple Operator Station a separate log shall be kept with serial numbers starting from 001, and increasing by one for each successive contact. All logs of a Multiple Operator Station shall be submitted by the operator under whose Call Sign the transmitters are working. No two transmitters of a Multiple Operator Station are permitted to operate on the same band at any time.

3. Amateurs may enter for any section.

4. One contact per station for phone to phone, also one for c.w. to c.w. per band is permitted. Cross mode operation will be accepted for scoring.

5. Entrants must operate within the terms of their licences and in particular observe the regulations with regards to portable operation.

6. Serial numbers consisting of RS or RST report plus three figures commencing with 001 and increasing by one for each successive contact shall be exchanged.

7. Scoring—

(a) Portable/Mobile Stations:

For contacts with Portable/Mobile Stations outside entrant's Call Area 15 points

For contacts with Portable/Mobile Stations within entrant's Call Area 10 points

For contacts with Fixed Stations outside the entrant's Call Area 5 points

For contacts with Fixed Stations within the entrant's Call Area 2 points

(b) Fixed Stations:

For contacts with Portable/Mobile Stations outside entrant's Call Area 15 points

For contacts with Portable/Mobile Stations within entrant's Call Area 10 points

8. The following shall constitute Call Areas: VK1, VK2, VK3, VK4, VK5, VK6, VK7, VK8, VK9 and VK0.

9. All logs shall be set out under the following headings: Date/Time (G.M.T.), Band, Emission, Call Sign, RST/No. Sent, RST/No. Received, Points Claimed. Contacts must be listed in numerical order.

In addition, there shall be a front sheet showing the following information:—

Name Address

Call Sign Section

Division (6-hour or 24-hour)

Points Claimed

Call Sign of other op./s (if any)

Location of Portable/Mobile Station

From hours to hours

A brief description of equipment used, and points claimed, followed by the declaration:

"I hereby certify that I have operated in accordance with the rules and spirit of the Contest."

Signed Date

10. The right is reserved to disqualify any entrant who, during the Contest, has not observed the Regulations and the Rules of this Contest, or who has consistently departed from the accepted code of operating ethics.

11. The decision of the Federal Contest Manager of the Wireless Institute of Australia is final and no disputes will be entered into.

12. Certificates will be awarded to the highest scorer of each section of each division. Additional certificates may be issued at the discretion of the F.C.C. The six-hour certificates cannot be won by a 24-hour entrant.

13. Return of Logs:

All entries must be postmarked not later than 28th February, 1967, and be clearly marked "John Moyle Memorial National Field Day Contest, 1967," and addressed to:—

Federal Contest Manager, W.I.A.,
55 Moulden Ave., Mt. Yokine,
Western Australia.

RECEIVING SECTION

14. This section is open to all Short Wave Listeners in VK Call Areas. The Rules shall be the same as for the Transmitting Stations, but may omit the serial numbers received.

Logs must show the Call Sign of the Station heard, the serial number sent by it, and the Call Sign of the Station being worked.

Scoring will be on the same basis as for Transmitting Stations. It will not be sufficient to log a station calling CQ. A station may be logged once only for phone and once for c.w. in each band.

Awards: Certificates will be awarded for the highest scorer in each Call Area.

LOW DRIFT CRYSTALS

FOR
AMATEUR
BANDS

ACCURACY 0.01% OF
STATED FREQUENCY

3.5 and 7 Mc.
Unmounted, £2/10/0
Mounted, £3/0/0

12.5 and 14 Mc.
Fundamental Crystals,
"Low Drift"
Mounted only, £5.

THESE PRICES DO NOT
INCLUDE SALES TAX

Spot Frequency Crystals
Prices on Application.

Regrinds £1/10/0

MAXWELL HOWDEN

15 CLAREMONT CRES.,
CANTERBURY, E.7,
VICTORIA

LOG BOOK

IS NOW AVAILABLE

Larger, spiral-bound pages
with more writing space.

Price 7/6 each
including Postage

Obtainable from your Divisional
Secretary, or W.I.A., P.O. Box 36,
East Melbourne, C.2, Victoria.

- * **GALAXY V. All-Band S.s.b. Transceiver**, u.s.b./l.s.b. switching, xtal calibrator, with heavy duty 240v. a.c. supply/speaker unit in matching cabinet \$650
- * **SWAN SW350 Transceiver**, same features as the Galaxy V. \$650
- * **GALAXY Duo-Bander 84**, 40/80 mx S.s.b. Transceiver, 300w. plus \$225
- * **Hy-Gain THEJR**, 10-15-20 mx 3-element Beam \$160
- * **Hy-Gain THEDX**, 10-15-20 mx 6-element Beam \$260
- * **Hy-Gain 14AVQ**, 10-15-20-40 mx Vertical, coax-fed \$50
- * **Hy-Gain 18AVQ**, same as 14AVQ with 80 mx coverage added \$75
- * **Webster Bandspanner**, all-band mobile centre-loaded Whip, with bumper or body mounting \$50
- * **D.c.-D.c. Mobile Power Supplies** for Galaxies and Swans \$100 and \$120
- * **Alliance U98 and CDR TR44 and Ham-M Antenna Rotators**, with 230v. a.c. indicators-control units \$55 to \$180
- * **Type Swan SW350 Vernier Dial Movement assembly** \$3
- * **50 pF. Air-Trimmer Condensers**, with extension shafts \$1
- * **9 Mc. German Crystal Filters**, with carrier crystals \$35
- * **5180 to 5325 Kc. Crystal Filters**, octal plug-in, with carrier crystals \$15½
- * **Used Eddystone 88A 160-19 mx bandspread Receiver** \$225
- * **Used Wagner 1A all-band s.s.b. Transceiver**, with Wagner a.c. supply and speaker unit \$350

All prices are net, cash with order.

SIDE-BAND ELECTRONICS ENGINEERING

P.O. BOX 23, SPRINGWOOD, N.S.W.

Telephone Springwood 51-1384, part of the Penrith telephone exchange area,
not a Sydney exchange number!

For Reliable Connections

OTL

RESIN CORE SOLDERS

O. T. LEMPRIERE & CO. LIMITED

Head Office: 27-41 Bowden Street, Alexandria, N.S.W.
and at Melbourne • Brisbane • Adelaide • Perth.



OTL/76

DURALUMIN, ALUMINIUM ALLOY TUBING

IDEAL FOR BEAM AERIALS AND T.V.

★ LIGHT ★ STRONG ★ NON-CORROSIVE

STOCKS NOW AVAILABLE FOR IMMEDIATE DELIVERY

ALL DIAMETERS— $\frac{1}{4}$ " TO 3"

Price List on Request

STOCKISTS OF SHEETS—ALL SIZES AND GAUGES

GUNNERSSEN ALLEN METALS PTY. LTD.

SALMON STREET,
PORT MELBOURNE, VIC.

Phone: 64-3351 (10 lines)
Telegrams: "Metals," Melb.



HANSON ROAD,
WINGFIELD, S.A.

Phone: 45-8021 (4 lines)
Telegrams: "Metals," Adel.



20 mx, of course, is wide open to everywhere during each 34-hour cycle 80 and 40 mx appear to have fallen away somewhat, the long and short path on the latter to Europe being something of a fringe circuit, with signals weak and difficult to work. On 80 mx the Asians are becoming audible before midnight, but the QRN at this QTH is also increasing rapidly.

Easton Is. Wally WA3PTQ plans to operate from here for a period of three months, starting about Oct. 10. He'll be using a Swan 300, but is unsure of his call sign at the moment. (LITKA).

9X8VF: QSLs may be had from ONSPD, the customary GMT/GMD and SAE/IRC's for reply are required. (11/2/74)

Walla Island: FWERC. Robert, has a shed with some W/K7 stations most Saturdays and Sundays at 0800 G.M.T. on 14044 a.s.b. (LIDKA). Camerouns HXIQQ will be here for a two-year stay. Call now TJ1QQ, QBL via W4DQ8. Q3UGT

Gaben TREAD is active a.m., around 21180.
14225 kc, mostly week-ends. TRIAG is still
active c.w. (G3UGT). QSL via Guy Vallier.

Canada For the Centennial year 1967, all

Indoneisa: Bob SVILP is presently signing WOGTA/3F4 from Sumatra. He will be on almost daily at 1800 GMT on 34740 mhz.

Christmas Island VK8DR and VK8XI are

14210 at 1145 G.M.T. He usually QRT as soon as the pile-up grows. QSL K2MGE (LIDXA). Ebu and Corman are QSLs. These are not

Solomon Is., Steve VIKLN has been active

Crete SV0WL will stay here for two years.
QSL via W3CJL (VE3PKR).
Dahomey SN2AAW and SN2AAZ have lic.

ences to operate from Dahomey. They will be active week-ends. Signs TY1BC (VIE3XR)
Daa Is. Active here is MP4DAH on 21 Mc.

Farquhar is Don W9WNY at the time of typing this is about to open from here after just concluding a stint from VQ9AA/D Desroches Is. Call will be VQ9AA/F. Don and Jose CR7GF intend to go on from here to other exotic Indian Ocean areas so keep an ear to the frequencies. Don is always easily located by the big pile-up about 5-up from his frequency QSL W6ECL.

Sir GUS, W4RFD The great DX-peddler is now putting out a DX magazine. It is reported to be a good publication and it should be if it included extracts from Gus' fabulous travels. No other info as regards rates, etc.

is Willis from Zanzibar, who incidentally admits unashamedly that he is an uncertain QSL. Did anyone get a card from him when he was VQJGDW. However, now that he has appointed W3CTN to handle the situation, all should be OK.

Grand Cayman Is.: This stint is now over but I have been asked by Doc K4CAH to publish QSL info on these cases to be sure

Antares: KC4USH gives his QTH as How-
ard Station, 2,000 miles south of N.Z. QSL
to K1NAP, Davisville, Rhode Is.

Shetland Is.: GMBVK active and looking for Oceanic stations on all bands including 1.8 Mc

VR4LN/VRt reported as foney.
Botswana (used to be Bechuanaland): Z890

Daker 6W8DD daily on 14 c.w. 0730g.
Lord Howe Is.: When you read this if all
goes according to plan Arch 1964-1965 will be

ACTIVITIES

converted to a.s.b., he has worked the following on 14 Mc 4X4HW, GMXDPK, VSPARL, DUEH KC4UUS, GCFPMV, SLASH, IS1DWW, ITIBAI, CK1AAC, CK9CO, HUXAL, FBYYY, EPIDQ, OXHX, KC4UWH, also Ks and Ws on 10 mhz

Peter VK4PJ writes giving an impressive list of a.s.b. worked on 30.13.10 mx His Galaxy and beam seem to be really doing the

band, several Europeans were worked at good strength, also some Oceania prefixes. On 15 many calls such as BVW CBRK, YASRG, MMMAW were heard. **BALE** **CAWU** **TCAR** **QSO**

Res VKSTL, with his big quad, landed this

CPMAAN, CCRCO, EIB, EPBQ, ERIAC, GC,
IPMV, GCIFKW, GDMTU, GMZHCZ, HIKXAL,
HILC, KMBAB, MPMTBO, KP1A00/KG4
(Quantitative) B1, QAFV, QKBY, B1A0C

HLZV, VEFJZ/SU, SV1BH, TG8CJ, T1H1,
UFEKPE, UFIQB, VOIHP, VP2AC, VPBJJ (SU
K11a) VPHDA, VOIAX, VOAAA/D, VBATC

QTH: KS4CC—Box 1148, Miami, Fla., 33142.
IC1UB, IC1HW—W3CZ.

PJAO/C—P.O. 273, St. Nicolas.
#05BW—W4HKJ
HIEKMT—U.S. Embassy, Santa Domingo.

SUMMARY

within this big family, clubs are daily being created to meet the needs of those who have special interests or activities. The int. S.A.b'ers puts personalities before prefixes. The A.H.C. or Award Hunters' Club is self explanatory in its aims. Also other clubs exist for technical discussion rather than social togetherness. In them each Ham finds his sense of belonging according to his particular desires.

tioned, retired or has a valid reason for not pursuing further the rat race may apply. The resultant certificate makes good wall paper but what is more important are funds created.

along with countless others of this world's limping men that the word defeat is not in his dictionary. The club has its fees for members.

My thanks to the month's contributors:
LIDXA, Fla. Dker, "Air Waves," OSUOT
ZLHV, Ed. "Break-In", VVYV VVATH

VK CONTEST MEN
Remember your 1986 VK/ZL Contest log must be posted this month. It must arrive in ZL before 31st December. Address: N.Z.A.R.T. Contest Manager, 188 Lytton Road, Gisborne, New Zealand.

NEW CALL SIGNS

VK2BIE—C. S. Shaw, 183 Jamison Rd., Penrith.
VK2BIN—J. H. Thomson, 34 William St.

VK2BMC—G. M. Browning, 24 William St.
Hornsby
VK2ZQL—S. G. Lestheim, 21 Arcadia St.

VK3ZKH—G. J. Cohen, 24 Pakington St., Kew.
VK3ZKH—G. J. Cohen, 24 Pakington St., Kew.

VK3ZUR—B. K. Fraser, 7/68 Brighton Rd.,
Elsternwick.
VK3ZVS—A. O. Le Grip, 37 Moorhouse St.,
East Camberwell.

West End, Brisbane.
VK4ZDB—H. R. Brooks, 162 Long St., Too-
woomba.

VKSZIA—R. W. Anderson, 9 Stockton St.
Elizabeth
W. M. F. Olsen, 25 Edwards St.

VK5ZRA—J. A. Cooper, 33 Lincoln Cres.
Poorska.

A LARGE RANGE OF TRANSMITTERS, RECEIVERS, TEST GEAR, AND DISPOSALS ADIO PARTS AVAILABLE

* TRANSCEIVERS, TR1885-7

115-145 Mc. Employs heterodyne exciter in tx. TT15 p.a. Single xtal locks Tx and Rx on same frequency. In-built modulator. Supplied with 4.86 Mc. xtal. \$30, circuit \$1.

* MARCONI TF1101 R/C OSCILLATOR

20 c.p.s. to 200 kc., 1% distortion, current model. \$240.

* SR550 DUAL CONVERSION COM. RECEIVER

180 metres to 6 metres, Amateur Bands only. 3.5 Mc. xtal band edge marker, xtal supplied, product detector for s.s.b. \$240, 10% discount for cash.

* SCR522 V.H.F. TRANSMITTER/RECEIVER

100-150 Mc. Complete with tubes, \$28.

* PERSPEX SHEET

1/16 inch thick. Size 4 1/2" x 16". \$1 per sheet.

* COMMAND TRANSMITTERS

4-5.3 Mc., 5.3-7 Mc. Complete with tubes, \$15.

* TR3624 TRANSMITTER/RECEIVER

Approximate frequency, 200 Mc. Contains 46 miniature tubes, \$30.

* 3J160E HIGH POWER TRIODES

120 Mc. full ratings. Heater 10v. 28a., anode max. volts 3000v., anode max. current 1000 mA., r.f. output 2160 watts. \$8 each.

WANTED TO BUY

Communication Receivers, Test Equipment, etc. Call, write or phone. Equipment inspected and picked up at your convenience any night or week-end.

* VALVES

EF50, 20c ea.; 7C7, 10c ea.; CV131, 6CQ6, 50c ea.; 6AC7, 20c ea.; 6AL5, 20c ea.; 6C4, 6AM6, 50c ea.; QQE03/12, \$2 ea.

* SIGNAL GENERATORS

TE22 Audio Generator, freq. range: sine 20 c.p.s. to 200 kc., square 20 c.p.s. to 25 kc., in four ranges. Output, 7v. p-peak. Output impedance, 1,000 ohms. Price \$42.

* METERS, P25 TYPE

0-500 uA., \$5.25; 0-100 uA., \$6.95; 0-1 mA., \$4.50; 0-10 mA., \$4.50; 0-50 mA., \$4.50. Full range of Meters and Multi-Testers available.

* CO-AXIAL CABLE

UR70 72 ohms, 3/16 inch diam., in 27-yard rolls, \$2 plus 75c pack and post. In as-new condition.

* RAIR COMMUNICATIONS RECEIVER

150 Kc. to 15 Mc. in six bands. B.f.o., etc. Genuine original condition, with a.c. power supply, \$70.

* TRANSISTORS

Brand new. OC72, OC44, 2N132, OC66, OC45, 80c each. AT1138 Power Transistor, 30w., Class B, \$3. Also Diodes: OA71, OA81, OA85, 35c each.

* SR700A TRIPLE CONVERSION COM. RECEIVER

80 metres to 10 metres. 1st and 3rd oscillators xtal controlled, 3.4-4.0 Mc. tunable i.f., selectable sidebands, 85:1 geared dial, v.f.o. output for transceive operation, selectivity: 0.5, 1.2, 2.5, 4 kc. Internal 1 Mc. xtal calibrator (xtal supplied). Undoubtedly the finest receiver ever to come out of Japan. \$500, 10% discount for cash.

* MILLER 455 Kc. PRE-WIRED I.F. STRIPS

Comprises two i.f. stages, ceramic filter, diode detector, 55 db. gain, NPN silicon transistors, d.c. requirements 6v. d.c. 2 mA., size 1 1/2" x 1 1/2" x 1/2" inch. \$8.70 inc. tax.

* TE10A MULTIMETERS

100,000 ohms per volt. Ranges, d.c. volts: 0.5, 2.5, 10, 50, 250, 500, 1K.; a.c. volts: 2.5, 10, 50, 250, 1K.; d.c. current: 10 uA., 1 mA., 25 mA., 250 mA., 10 amp.; resistance: 20K, 200K ohms, 2 megohms, 20 megohms. To clear, \$25.95.

* POTENTIOMETERS

Wire wound, 40c each; carbon, 25c each.

* RESISTORS

1/2 watt, I.R.C., Welwyn, Eire, Ducon, Philips, \$2 per 100.

* J.F. 2-STROKE MOTORS

Ohlsson and Rice. Brand new, just imported from America. Weighs only 5 1/2 lbs. 6,300 r.p.m., supplied with 3:1 reduction gearbox, output 2,100 r.p.m. Ideal for driving Alternators for Field Days. Fuel consumption 1 pint per hour. \$30.

ANY QUERIES

Beginners are welcome, ask Jim and Laurie Gardiner any questions. They are Amateur Radio operators and will be only too pleased to assist.

* CRYSTALS

Personal shoppers only, \$1 each.

* SPECIALS

3AP1 c.r.o. tubes. New in cartons, \$1.25.
3000 type Relays, 50c each.
Inter-Office Phones, 15-station type, \$4 each.
7-pin skirted Valve Sockets, P.T.F.E. insulation, silver plated, only 20c each, c/w shield.
Speaker Transformers: 7000 ohms to 2 ohms; 10,000 ohms to 3.5 ohms; 50c each.
9-pin skirted P.T.F.E. Valve Sockets with shield, 50c each.
Irish Recording Tape, Mylar Base: 150 ft. x 3 in., 75c; 900 ft. x 5 in., \$2.75; 1150 ft. x 8 1/2 in., \$3.50; 1800 ft. x 7 in., \$4.75.
3 uF. 100v. d.c. Block Capacitors. Only 25c each or \$2 per dozen.

* MINIATURE CAPACITORS

New shipment. 600 v.v. Values: 0.001, 0.02, 0.005, 0.0005, 0.0002, 0.0001 uF. \$2 for 80, plus freight.

ALL ITEMS FREIGHT EXTRA

UNITED TRADE SALES PTY. LTD.

280 LONSDALE ST., MELBOURNE, VIC. (Opp. Myers)

Phone 32-3815

2 Clarendon St., Avondale Heights, W.2, Vic.

73. Cyril SZCZK

The VKa V.h.f. Group are holding a large

The content will be of three days' duration.

The times of operation will be as follows.

Last year skeds were made with ZL4 at

Open sections are all bands 144 and up. Six

The normal numbering system will apply

Transmitted notice should contact the contact

© 2006 The Authors
Journal compilation © 2006 Blackwell Publishing Ltd

34 Me.: Things have been quiet for the

Most of the 53 Mc boys have been keeping

144 Mc. The main events this month have

On 13th of the month the band opened to

NEW SOUTH WALES

The V.h.f. Group Christmas Party will be

By now the path to ZI should have opened

It has been noted that attendances at the

The results for the VK2 V.h.f. R.D. Contest

The October meeting was very well attended,

The December meeting will be the Annual

The committee would like to hear from any of the country stations who wish to work into

参考文献

Conditions over the month of October have

It is hoped to have a 5 mW beacon operating

SOUTH AUSTRALIA

Strange things are happening it would appear

On the local front the main θ max activity is

On the same week-end, Jim SZQV, with

With respect to 2 m \times activity, the only news

KEY WORDS: *Chlamydia trachomatis*; *Neisseria meningitidis*; *Neisseria gonorrhoeae*; *Haemophilus influenzae*; *Streptococcus pneumoniae*

The South Eastern Radio Group would like

✱

FOURTH RADIO CLUB

The Articles of Association of the Youth

Young graduates of Y.R.S. in VICE are put-

This raises the point of expenses. Costs are

I hope I'm not doing a Nellie Melba fare-

Fig. 1. *Phragmites australis* (A) and *Spartina patens* (B) in the marsh.

Sub-Editor: D. GRANTLEY, WIA-L802H
P.O. Box 222, Penrith, N.S.W.

The highlight of October listening was the VK/ZL Contest, and although I personally did not participate in the phone work and due to other commitments, my listening over the period convinced me that there will be some high scores once again. To me the greatest surprise was the breakthrough on 15 metres on Sunday of the c.w. period. This band was open from 10:00 p.m. to midnight on the DX. One hesitates to mention an individual performance amongst the transmitting stations in an event such as this, where it is possible (as it was) to hear a station from the West Indies not hear a call from other than the Eastern States. But at the risk of repeating myself, I must commend Dave 2EO for an outstanding performance on c.w., and for his successful operation.

QUESTY SERVICE

A couple of months ago I mentioned that Harry Major is able to provide copies of circuits, etc. and gave all the details. However I failed to give you his address. It is: Harry Major, WIA-LS103, 30 Easton St., Glenside, S.E.S. Vic I can recommend these copies, they are clear and really well done.

AROUND THE SEACRUISE

[illegible]

Mac Millard has been active in A.W.I. circles for many years and as most of you know is very interested in reception on the higher frequencies. Thus he was delighted last week to catch a breakthrough on 30 Mc. when in a moderate period, he was able to log a station from the Hawaiian Islands, the Hawaiian Islands and also U.W.O. Mac tells me that it was the best opening on 10 in the last four years or so, and is hopeful of this band coming good in 1967. The overseas reports coming in here indicate that there have been good openings on the band in G land and other parts of the world.

On the home front here at 13055 I have been rather inactive other than for the c.w. section of the VK/LZ Contest, which as you know was held last night. The activity on 15 m.x. some logging on that band was low. We KW6DS, CBEL, VKGRN, VK8DK, and others JA call it "the band" and give you an idea of the way this band was used in. I turned to El at 2107 and by 0900z. less two hours when I had to go out. I claimed my position as the "band" and gave you some more info. You can see from the picture goes to show that this band can be fantastic when the right conditions (and operators) are about. 30 m.x has been very good lately. I saw a lot of activity on 30 m.x. ODS and many others were heard. 40 m.x was quite active here during the contest, but unfortunately the commercials made it hard to hear. I saw a lot of activity on 40 m.x. of K.V.E and Jaa swelled the score a little XAWN, ZOSDK and CENAS were heard at other times whilst JTJAG appeared on 80 m.x. I will include him in the log. I hope the promise of an excellent summer period.

8TY (Adelle Idd.), KP4CL, LAIKI, LASYE, OH400, PASHBO, PABXPQ, SMERLA, TIAJP, VK4MI, YS1SRD, 4X4UJ plus the three DX-peditors PY4XA, KIIMP/KC4 and W1WNV/HKS. Greg will be returning to VKs for another short period at the end of this year.

Ernie Luft, 15080, is still reaping the benefits of his ARND and this month has heard the following prefixes on 2x mx and a.m.: EA3, VQ8, UFR, UG8, HZ1, OA, TG8, CR8, XE, YU, CN, QEZ, MIB, G13, E4, PJ3, EP2, SQ8, TQ1, Z36 and a great many more common ones. Ernie's list was dated early October, thus it is most likely that his overall score of countries heard has increased by this time from the 133/94 at that date. Newest cards received by him were WOZTL, KC4UB3 with VK3GD for a top-band report.

From Bernard Hughes in London I received an interesting tape with a recording of a QSO on 10 mX between a DJ and a PY4 on s.s. The recording was taken in Worcester, U.K., and if this copy is a sample of the doings on ten metres, then it explains the very high scoring of Europe and W.s.w. on this band. For instance, in this month's all-band post-war table, the highest single s.w.l. score on 10 mX is 230 countries by a GIM listener, a W has heard 207, whilst six more have scores ranging from 110 to 184. The top scorer for this band does not operate c.w.

At one time or another our equipment went up down, and this month it was Bryan Prosser, 4085, who was the victim. Murphy said that was a surprise. We've been much more from Mauritius these days, due to studies and outside interests. It is necessary, due to certain conditions prevailing in Sydney, that I cut short the personal news at this date, Oct. 23. I must apologise to any individual member and also to the various groups for taking this action, but I assure you it is necessary. The tapes were also received from 4385 whilst tapes are acknowledged from Bryan Prosser, Doug Hend, Mac Hilliard, Bernard Hughes and John

D.K. WU ET AL.

Firstly, in reply to a query which I made to the I.S.W.L. boys re cards from the Don Miller DX-peditions, thus far none have been received. I am sure that the boys will be able to report from a s.w.f. who hear his transmission. I think we can at the Radio and Electronics Club, and I am sure that the boys will be able to be sent to Box 261, Rome. The station IDIDA, which was the subject of discussion here recently when operating on June 28-29, 1971, is a station in the town of Ravenna, Italy. Activity from T22W1 and 2JW are strongly suspected. TOMEF will answer any questions you may have. I am sure that the name of the station which he is working is, as a matter of interest, this operator is particularly helpful, as he tries to come on the air during the "Listening Period" of the I.S.W.L. "Best Listening Period" in order that s.w.f.s can have a chance of hearing him. (This is the "Best Listening Period" periodically, at a given time on a given band and mode, and the aim is to receive as many countries as possible in that period. Usually two hours).

TASBK CGLs go to **DJNPJ**. More stations for the **WSTCN** list are **YBIM**, **YBIRS**, **YP-6P2**, **CRKED**, **CGMAAN**, **RCICG** and **HKBYO**. Cards for **DJQST/X**, **YBIR** and **LDZBE** go to **Box 788, New N.J. 07011**. The following stations are new members of the **I.S.W.L.** and reports to them can be passed through their bureau: **WBEVZ**, **WBSBXG**, **KV-1**, **WV-1**, **WV-2**, **WV-3**, **WV-4**, **WV-5**, **KIMP** and **KSDYD**. **YALFY** can be **QSLed** per **Box 711, Hollins College, Virginia, U.S.A.** **RCMAY** can be reached at **Case 611, Guayaquil**, whilst another Ecuadorian **HCBM** hails from **Case 611, Guayaquil**. **YALFY** can be reached at **Box 4, Stanley, Falkland Isld. (Txn Monitor)**.

A note here in a copy of Monitor just arrived, to the effect that HIRSHMAN will QSL 100 per cent. all a.w.l. reports which are completely accurate. Also that JW is the new prolix for Swabard, with JK likewise for Jan Mayen. This will overcome the trouble we have had in the past when trying to identify these

SUMMARY

As we come to the end of another year, we can look back over 1986 and remember several highlights. The year has been marked, particularly in VKE and VKI, by better attended s.w.l. meetings. At this stage I would like to thank Chris Middleton-Williams for the time and trouble he has taken in his position as Secretary of the VKI Group. Due to my geographical situation, and the nature of my job, I have been unable to attend any of the VKI meetings, but members have commented favourably on the "doings" in VKI.

ladder. However, to date only four have been issued, Eric Treblecock (VK1), Don Grantley (VK2), Warwick Smith (VK3) and Chas Thorpe (VK4). I feel that number five is just around the corner, for a note from Ernie Luff this morning reveals that he has now 103 confirmations. Congratulations Ernie.

Two of our listeners have entered their names for National Service training, our top VK3er Peter Drew, who at present is up here at Ingleburn, and Barry Snell of VK3, who is at the time of writing, in Queensland. I had hoped that either Eric or myself would have become the first VK1 s.w.k. to reach the elusive "300 heard" mark, but they have both been too busy with their work to get up there. Unfortunately, I have in the last few weeks missed two or possibly three DX-peditions which would have done the trick, but it was not to be. There is always next year—and the year after—etc.

I would like to extend our thanks to Bernard Hughes, John Simora, Doug Kead, Ray Waite and Bob Fowler for typed information from the LA W. Council, the LA Bar, the Press, Sam Hilliard and Alan Ratner for their regular reports. To all my regular and irregular correspondents, I would like to express an opportunity of thanking you for writing and furnishing information which is necessary for the compilation of this page and I would like to thank Underwood who regularly get dragged to the telephone in the middle of their evening meal, also Mac who once or twice each week has to interrupt his dinner to answer my telephone or some query. Finally, to Ken and the Publications Committee, I thank you for your assistance and co-operation, and I would like to thank you for the fact that the space taken up by our page has been cut short, it has never been pruned by the editor or the committee who have regularly given all the space asked for. Lack of information has caused them to cut down.

To all mentioned afore by name or implication, and to licensed operators and s.w.'s alike who have provided technical advice, etc., I would like to take the opportunity to thank you and wishing you all a most happy Christmas and may 1987 bring joy and happiness—and better DX. Should anybody be passing through the Blue Mountains over this period, stop at Hazelbrook, ask somebody where Camp Pioneer is, and call in and say hello. 73, Don
1-2003

SHORT-WAVE BOOSTER

3.5 - 12 Mc/s.

This transistorised unit will improve sensitivity, selectivity, and signal/noise ratio of a receiver. Distant stations received clearly without fade.

SPECIFICATIONS:

Power Gain: 25 db.
Connection: In series with aerial.
Size: 2" long, 1½" high, 1½" wide.
Current drain: 1.5 mA.
Voltage: 3-12 volts.

DISCOUNT PRICE

Kit-Set Form 45/- (\$4.50)

Wired & Tested 55/- (\$5.50)

KIT SETS LIST

Box 176, P.O.,

FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA. END)

FEDERAL QSL BUREAU

Max Glew, ex ZLASM, now resident in Moorbabin, Vic., with the call sign VEJASB, has been successful in obtaining his old call letters and thereby with sign VKJASB. Bob WACHA expects to be active from Norfolk Island for several months commencing end of January 1967. Call sign to be used is not yet known.

The V.R.Z.A. (Society of Radio Amateurs in the Netherlands, founded in 1881) is a non-commercial radio society for the promotion and co-ordination of two-way Amateur Radio communication. Almost all Dutch active and DXing Hams are members of this Society.

The V.R.Z.A. QSL Bureau forwards QSLs to ALL Dutch Radio Amateurs (members or non-members of the Society), monthly, and free of charge. The latter Dutch QSL Bureau (V.E.R.O.N. of Rotterdam) sends the QSLs for non-members only twice a year, in June and December, which gives a big delay.

All cards for the Netherlands (PA, PE and PI stations) as well as for the Netherlands Antilles (PJ stations) and Surinam (PJ stations) may be sent via PA QSL Bureau, V.R.Z.A., Post Box 180, Groningen, Holland. Following are the details of the Telerite KLM's Special Parcel Certificate for the five QSOs with the Canary Islands decided in the period stated: Starts 0800 G.M.T. Dec. 31, 1966, end 1600 M.T.T. March 31, 1967. During each QSO local maximum and minimum temperatures of each station shall be mentioned and shall be also mentioned on the corresponding QSL. All modes of operation (c.w. a.m. a.s.b.) and assigned frequencies can be used. QSLs to be sent to P.O. Box 818, Santa Cruz de Tenerife, Canary Islands.

K.A.R.L. News says: "Recently, HMBU call has been heard mostly on 39 mc band a.s.b. HMBU was licensed about 3 years ago, but his license was expired as the K.A.R.L. call, 31, 1966. He did not renew his license and the call of HMBU was disappeared. Now, HMBU still claims to be the K.A.R.L. station, but a small island in the west sea of Korea, but it is the illegal operation. K.A.R.L. warned him by the letters not to operate illegally and to obtain the license from the official station in Ham stations all over the world not to contact with HMBU for a while until he gets the new license. K.A.R.L. does not handle the QSLs to and from HMBU."

—Ray Jones, VKERJ, Manager.

NEW SOUTH WALES

The Wireless Institute Centre was comfortably filled by members and visitors on Friday evening, 28th Oct., the occasion being the usual monthly meeting combined with the official opening of the John Peell Memorial Library.

President Tom BOD occupied the chair and extended a hearty welcome to all. Among the visitors were Mrs. Peell and party, which included Miss Hardy, Mr. and Mrs. Peell and Mrs. Toohy; Mr. and Mrs. Birney (who had donated to the Division a large number of test books "QSTN", etc. left by the late Wal Ryan, VKRTT, as well as a handsome silver cup); and Mrs. J. Birney. R. W. Walker, a NEW bawn; Mrs. McLeod (widow of the late Gordon McLeod, VKADCI), who has donated the technical library owned by her husband. Also at the meeting was Don Wallace, W6AM, well known to the DX fraternity.

The following applicants were welcomed into membership of the Institute: Gordon Clapp, Patrick C. Bennett, Peter J. Shannon, Geoffrey Z. R. Gilbert, Armstrong R. W. Walker, and the following Associates: Noel Wayne Gibson, Daniel Adrian Cliff, Allan Lloyd Kiddle, C. F. McLeod, Kevin Olive Hutchinson, Joe Pietras, Kendrick Young.

At this stage an adjournment was made to the room where the John Peell Memorial

SILENT KEY

It is with deep regret that we record the passing of:

Ex VKNO—Don Knock

Library had been installed. It will be remembered that last year the Council then in office had received a donation from John Peell (VKVWJ) following the auction of his gear. Following his death shortly afterwards, Council decided that this money should be used to establish a memorial library. Much preliminary "spadework" was carried out and it is very gratifying to parties to those who interested themselves in this project, to see that the present Council has been able to bring it to finality.

The very attractive cabinet occupies almost the whole of one wall of the centre room at WIC. The lower half has stained wooden doors with plate-glass doors above. Council Charlie Wilkins, in his usual quiet way of working more than talking, has spent much time on the decor of the room and the whole effect brought forth much favourable comment.

After brief remarks by the President and Senior Vice-President on the purpose of the function and the history of the project, Mrs. Peell handed over the key of the library. In doing so, she expressed her thanks and appreciation to the Divisional Council for the invitation to attend, and trusted that members of the Institute would derive much benefit and pleasure from the books that the library contained.

In accepting the key on behalf of the Division President Tom said that he had received many generous donations of books, the new cabinet was almost full and it appeared that a branch library would have to be opened shortly. He paid tribute to the library, which de Haan (VKJUR) and his assistant, Phil Tavares (VKJAT), for their efforts in sorting and cataloguing.

It was announced later that a set of rules would be formulated shortly to cover the borrowing of books from the library, and that will be published for the guidance of members immediately they come to hand.

The lecturer for the evening was Syd ASD, who spoke on "The growing use of cameras and 'Television Techniques'". The subject is such a vast one that even in a lecture time about double the usual length, Syd did very well to cover so much ground. The lecture was very good for such a lecture must have been colossal and his remarks, while very interesting to all members, were particularly so to those who are themselves working in the field of television and broadcasting in general.

As the writer of the notes had to leave the meeting early to attend another function, we must record our thanks to Stan ZERD for jolting down the main details of the lecture. Syd began by giving a description of the optical system of television cameras and different types of lenses—zoom, telephoto, etc., and various methods of lighting—artificial, natural, realism, sunlight, and lighting of the human form in a large studio light would be brought to the attention of the audience. High quality telephoto lens could give good pictures at a distance of one mile from the camera.

On the electronic side of television, descriptions were given of the operation and usage of the image orthicon in studio cameras, and likewise the vidicon in the broadcast camera for outdoor operation. All descriptions were illustrated by slides. The camera was the "work" of the Marconi MK. IV camera.

Then followed a section on camera control unit, vision mixing and vision distribution amplifiers which included a lecture on "within a lecture" on multi-vibrators. A central apparatus room was described with slides, showing both valve and transistor operation, shaping and line amplifiers. Syd then gave details of automated switching of television studio slides, and a virtual slide show amazed the audience by stating that a television station could be operated by four persons, mainly with the aid of push-button control. Automatic operation of the sequence of technical operation to produce the pre-arranged programme.

Some excellent shots were shown of the Ampex VR3000 video tape recorder, an amazing piece of apparatus which enables video tape to be added to the virtual slide show. Further slides and descriptions covered a typical studio set, distribution amplifiers, and sketches of individual sections of television apparatus.

Syd's lecture was given in the usual VERNON way manner, and he fully deserved the acclamation of the audience following the vote of thanks moved by Stan ZERD.

W.G.E.N. NEWS

Peter BAXI, the W.G.E.N. publicity officer, says that since the publication of the list of frequencies in the monthly Bulletin he has received many inquiries regarding the 3rd Channel C 1m net frequency. The correct frequency for VK3 is as published for Channel C, that is, 146.100 Mc. All crystal frequencies published are based on this. It will be noted that this channel does not agree with that used in VK3, and Peter thinks this is where the confusion has arisen. However, it will be noted that Channels A and B do agree with those used in VK3, so that people travelling interstate will be able to operate on the interstate net.

GENERAL NEWS

The Federal Councillor (Pierce Healy, 2APG) arrived at Perth, where he had presided at the Divisional Council at the South-West Zone Convention over the October holiday week-end. Fifty-two people attended the dinner and the day event were also well patronised. The official com-

VK2 DIVISION

Radio Equipment Store

We would like to wish all readers the Compliments of the Season. You will find a list below of some HC6U crystals. Some of the FT243 series which have been featured over the past few months are now in short supply so please advise second choices where possible. Many inquiries for test type were received this year and several units have been sent interstate. Inquiries still welcomed as we may still have something that will suit your requirements.

The catalogue is to be revised early next year. If you have found it hard to obtain coil formers we now have quite an extensive range in 4 mm. and 7 mm. formers with cans, tag rings and slugs to suit.

Merry Christmas and a Happy New Year.

—R.E.S. Committee.

CRYSTALS

In HC6U holders, \$1 each, limited numbers in most cases: 7595, 8864, 8971, 8977, 9044, 9051, 9057, 10,042, 10,780, 12,093, 13,830, 13,940, 13,950, 13,970, 14,050, 14,080, 14,070, 25,193 kc.

TAPED LECTURES

- 21 V.h.f. Aerials, 1 hr, 32 slides, H. Burtoft, VK2AAH.
- 22 A Field Day with a Difference, 1 hr, 34 slides, Eric Warren.
- 23 Principles of A.G.C., 77 mins, 20 slides, Bob Winch, VK2OA.
- 24 S.a.b. and C.w./A.c., 73 mins, 14 slides, Bob Winch, VK2OA.
- 25 A New Look at Radiation, 90 mins., 80 slides, Joe Reed, VK2JR.

14 Atchison St., Crews Nest, N.S.W.



DF-2

FOSTER DYNAMIC MICROPHONES FOR HAND-DESK USE

SPECIFICATIONS:

Output Impedance	50 ohms or 50K ohms
Effective output level	-55 db. [0 db. — (one) 1V. Microbar]
Frequency response	200 to 10,000 c.p.s.

OMNI-DIRECTIONAL DYNAMIC:

SIZE: 3" x 2-1/8" x 1".
Cable: 12 ft. of P.V.C.
Switch: on-off.
Desk Stand. Clip folds for hand use
Colour: WHITE.
Plastic Diaphragm.

Retail Price
50K ohms
£2/14/0
+ Sales Tax 4/9

A QUALITY PRODUCT OF EXCELLENT DESIGN



Marketed by

ZEPHYR PRODUCTS PTY. LTD.

70 BATESFORD STREET, CHADSTONE, S.E.10, VIC.

Manufacturers of Radio and Electrical Equipment and Components

Agents: D. K. Northover & Co.; Neil Muller Ltd.; Homecrafts (Tas.) P/L; Jacoby, Mitchell & Co. P/L; T. H. Martin P/L.

NOW AVAILABLE—

THE 1966 EDITION

★ A.R.R.L.—Radio Amateur's Handbook

The Standard Manual of Amateur Radio Communication

Price \$6.10 posted, or 58/6 and postage 2/6

NOW AVAILABLE—

★ The Radio Transistor Handbook

by Stoner & Earnshaw.

Price \$6.65 posted, or 64/9 and postage 1/9

THIS UP-TO-DATE HANDBOOK COVERS A WIDE RANGE OF COMMUNICATION
FOR BOTH AMATEUR RADIO & COMMERCIAL APPLICATIONS

MCGILL'S AUTHORISED NEWSAGENCY

Established 1860

183-185 ELIZABETH STREET, MELBOURNE, C.1, VIC.

"The G.P.O. is opposite"

Phones: 60-1475-6-7

vention station. ZWG, was active over the week-end and around the interest of the Wagga City Council's representative (Ald. R. J. Harris) He said the fact that a radio network was active for use in times of emergency was very reassuring.

Pierce also related details of this year's Remembrance Day Contest. As the results of this contest are published in the next issue, notes appear in print, we will confine our remarks to offering congratulations to the VWS division winners. The winners were VK1 and VK2 State section winners. Phone-VK1Q1 (410 pts), VK2X4 (675 pts); C.W.-VWSQ1 (485 pts); Open-VK2ZC (134 pts); VK2ARH (134 pts); VK2ZC (134 pts); VK2ZC (134 pts) and first in Commonwealth, Receiving-VK1, J. Hurren (375 pts), VK1, A. Nutley (1033 pts).

Keith ZAKX said that there was an attendance of 100 at the Hunter Branch Annual Convention in October, and the field day was also well patronised. Divisional Council was represented at the dinner by Cyril BCP, while two other councillors (Peter ZAXJ and Stan ZXRJ) as well as the secretary/treasurer (Mrs. Betty Gerdes) with OM, Harry ZEAR, attended the field day. He went on to say that the Hunter Branch will hold another field day on 4th Dec., at Bolton Point Park. There will be the usual on call for the day and there will be a more informal atmosphere. Visitors from Sydney and other areas would, he usual, be very welcome.

As reported in previous notes, Syd SSG had tendered his resignation from the position of QSL officer, after a period of seven years in office. At the October meeting, the QSL cards were handed over to him. Nov. onwards QSL cards will be handled by Roger ZZG, with the outwards cards still being dealt with by Ted ZAGD. The well known G.P.O. Box No. 1734 would be retained. Following the above announcement, Bill Y2B moved that a hearty vote of thanks be accorded Syd for his good work on behalf of the Division, and this was carried by acclamation.

The Education Officer Harold ZAAK, advised that he had arranged a selection of films for a December meeting. Members are asked to take special note that this meeting will be held on the third Friday, the 18th, and the fourth Friday, in other months. The December meeting is a family night, so take Mum and the Harmonics along for a night out.

As this will be the last issue for 1966, may we wish our readers a very happy Christmas, with health, prosperity and good DX during the coming year. 74, Ivana ZAKH.

HUNTER BRANCH

The November meeting of the Branch, held at the Technical College, was addressed by an ZAZN, of the staff of "Electronics". Ian gave a detailed and very interesting talk on the use of a very transmitter which he has designed, to be featured in the magazine this month. The unit uses 31 transistors and two valves and can operate at 160 mhz, either upper or lower s.b. From questions which followed the lecture, it was evident that members are thoroughly enjoying the visit. Ian and I were anxious to find out as many things as possible about the new unit. Stuart ZAYF expressed the thought of the members that the high interest which was carried by hearty acclamation.

There was a further sale of some hand drawn aluminium rods suitable for v.h.f. beams and this time the sale was very successful. It was available for the Branch contribution to the I.T.U. fund. A quite pleasing amount has now been raised and the money will be transmitted to be transmitted to the Divisional headquarters at the end of the month.

Quite a deal of activity on both h.f. and v.h.f. has been going on during the last few weeks, possibly due to the conditions which now exist regarding our friends in the P.M.G. Department. Some members have recently had quite close contact with the Department concerned, but it appears that they have escaped unscathed in most cases. It is to be hoped that this will be maintained.

Troubles have been the order of the day with SAWX of late and it has been increasingly difficult to hear the broadcasts. Men who are doing the thing are doing it well and work is going on to improve the position and it is expected that soon the reliable signal of former days will return. Until then, anything might happen, might, will, happen.

On v.h.f., some good 6 mhz openings have appeared during the month and both Bill ZZWM and Kevin ZKZW report interstate contacts. On the band have had the same success. Des ZZDN, who uses his vertical collinear to monitor DX, v.h.f. and has been very successful in this when he heard what appeared to be an opening. He scored again, making solid contact both ways with Dick ZZCF on 43. The

OBITUARY

DONALD BRADER KNOCK (EX VK6MO)

As we go to press we learn with much regret that Donald Brader Knock (Ex VK6MO) had passed away in hospital on 31st October, following a lengthy illness. Undoubtedly it would be true to say that both the name Don Knock and the call sign VK6MO were very well known combinations among Amateurs in this country, particularly among those with associations with the Radio Club goes back prior to World War II.

Born in Southampton, Lancashire, 65 years ago, Don saw service in World War I. Being an adventurous type, he joined the 1919 expedition to Russia in what proved to be an abortive attempt to overthrow the Bolsheviks who had taken over the country following the Russian Revolution.

Having served with the Engineers, with emphasis on radio communication, Don took out a G call on his return to England in the early 1920s. Arriving in Australia around 1925, he undertook the organisation of radio communication for the Vester Meat Company at Richmond, where his persistent efforts there resulted in considerable progress being made in opening up the North-East.

Another of Don's interests was radio journalism and he continued a rather chequered career by publishing a monthly magazine, "Radio News", and became Radio Editor of the Sydney Bulletin. A post-war attempt to re-enter the radio business failed, as was a second attempt. Still later, he was employed by Philips Electrical Industries and in a civilian capacity with the Department of the Navy.

About 15 years prior to his death, Don surprised his friends by disposing of his gear and relinquishing his call sign. However, he continued to take an interest in Amateur radio, in spite of a deterioration in his health.

Perhaps we could say that one of Don Knock's greatest contributions to Amateur Radio was in v.h.f., for during the 1930s, he and other kindred souls carried out much pioneering work in this field. He was the author of the R.E.L. Antenna Handbook, carries a description and photograph of a 56 Mc. beam antenna developed by him.

The N.S.W. Division of the W.A. was well represented at the General on Tuesday, 3rd Nov., which took place at Eastern Suburbs Crematorium following a service at St. Mary's Church of England, Waverley.

To Mrs. Knock and son, Rodney, may we offer sincere sympathy and behalf of all members of the Wireless Institute of Australia.

reliability of this frequency between the two cities appears to be improving and the chape just mentioned have fairly regular contacts.

Nobody in the Branch are aware to have his high interest in the R.D. Contest. Geoff ZBGF from Taree was up among the leaders and quite a number of Newcastle and district stations were in the contest. It seems that they forgot to send their logs in. One good excuse was the incidence of the 'flu during that week-end, and many a good man had laid low by the time the logs were in. In another activity the Scout Jamboree on the Air and so impressed the Mayfield boys who had laid low by the time the logs were in. In another activity the Scout Jamboree on the Air and so impressed the Mayfield boys who had laid low by the time the logs were in. In another activity the Scout Jamboree on the Air and so impressed the Mayfield boys who had laid low by the time the logs were in.

Another of the club members, Susan ZBBS is about to commence operation on 10 mhz with a carphone as soon as crystals arrive for the unit. Jan ZBJO has made the necessary conversion and the set plays but the arrival of crystals will not put him out of the air from home. John Bedford still awaits his call sign so that he too can go on the v.h.f. bands.

And guess who ZAKX has got the deal in another activity the Scout Jamboree on the Air and so impressed the Mayfield boys who had laid low by the time the logs were in. In another activity the Scout Jamboree on the Air and so impressed the Mayfield boys who had laid low by the time the logs were in.

In case the postal authorities or whoever, allows you to read this before the end of December, you will please note dear reader, some interesting facts about coming events.

The next meeting of the Branch will be at the usual place, Room 6, Clegg Building, Newcastle Tech. College, on Friday, Dec. 2nd. Lionel ZCS is showing some of his recent trip overseas and supper—I have been looking forward to this all year! The Sunday following there will be a Field Day at Bolton Point Park with no charge for admission—you know, Christmas and all that, and finally, but perhaps most important, there is no meeting in January. The first meeting in 1967 will be on Friday, 3rd Feb. 1967, which, although you may not know it, is not far off. So it remains only to say, Happy Christmas, good DX, Prosperous New Year, and all the best from President and fellow members of the Hunter Branch, including your scribe, ZAKX.

CENTRAL COAST

The last meeting of the Central Coast Branch was held on Oct. 21 at the Gosford School of Arts. Ernie ZEGJ gave a very interesting illustrated talk on his recent trip to the South Pacific which had everyone mentally planning future excursions to similar places. Roncans seemed to be the most interesting port-of-call and from the pictures was certainly very beautiful.

We had several visitors from Newcastle and Sydney and, as usual, it was a most enjoyable evening. The final matter over a cup of tea and home-made cake was the meeting.

We have had word from Phil ITX, who is travelling with his XYL somewhere in the Pacific East. He had a few days off and was able to meet a few Hams. He says that during the monsoons they take their quads (I wonder why?) and then re-erect them and future excursions to similar places. Roncans seemed to be the most interesting port-of-call and from the pictures was certainly very beautiful.

Our Field Day will be held at Gosford in mid February 1967. It will be at the usual place, the Gosford School of Arts. The day offers many attractions for all the family. All activities and meals are included in the entry fee.

Happy to report that Muriel ZAAJ is feeling much better and spends a little time on the air now. 74, Merv ZKX.

— . . . —

VICTORIA

I.T.U. FUND ACKNOWLEDGMENTS

A. K. Ballantyne, ZKCB, \$4; J. Humphreys, ZAKH, \$3.12; J. Cuthbert, ZSZU, \$3; V.R.I. Wireless Club, \$1; \$3; G. Gillingham, \$3; D. Long, ZSLV, \$3.

WESTERN ZONE

Of major importance in our notes this month is a report on the proceedings of our Annual Convention, which was held on Friday 10th at Bordertown, S.A. The combined gathering of Amateurs from VK3 and VK5 was a most successful affair which attracted members from Adelaide, Melbourne, Warrambool, Mt. Gambier and a good roll-up from our own Zone.

The initial point of convergence was the home of Tony ZAL, where the hungry travellers—some arriving by aeroplanes and some bike—made good use of Tony's splendid barbecue facilities. It was not quite warm and sunny to try out the new mobile, but Tony's Bob ZARM had set up his h.f. gear to talk in the mobiles and 2 mhz carphones also served to augment this facility. Tony's v.h.f. shack attracted a lot of interest with its set-up reminiscent of a N.A.S.A. tracking station.

At the Annual General Meeting, Bill ZEXX was elected our new Secretary, and Merv ZAKW (our Secretary for the past 15 years or so) to step down for a well earned rest.

A.O.C.P. THEORY CLASS

The Victorian Division of the W.I.A. will commence a theory class in February 1967.

Those wishing to enrol should do so immediately by contacting the Administrative Secretary, P.O. Box 36, East Melbourne, or by phoning 41-3535.

Amateur Radio, December, 1968

Harry 3ZK became our new President and controller of our Wednesday night hook-ups which will be held in future on 3610 kc.—I said kc. fella, my new slogan is next to Harry's Vice-President and Junior Vice-President were elected, Herb 5NN and Gavin 3ABJ respectively. Our W.C.E.N. Co-Ordinator for a Roy 3ZYG, who will designate h.f. and responsibilities to Bob 3ARM when necessary.

Followed the general meeting a display of home built equipment was held which was won by Harry 3ZK with his all-band tie-top filter s.a.b. in-handling of three 807s (un-tracked) next time mate.

Next on the agenda was the 80 mhz hidden tx hunt which was tracked down in pretty slick time by Roy 3ZYG—following 8 meter readings only and no d.f. loop—great and me waiting all that breaso on my loop. 3AFU and 3IB/3ZK were only a few minutes behind the winner. The next excursion was a guided edition of the microwave station which attracted a capacity roll-up and we are very much indebted to the Supervising Technician, Mr. David Kertim, for a most informative description of all phases even if most of us d.d. get lost in the wave guides, channels and gyroscials.

The day wound up with a magnificent spread at the Bordertown R.S.L. Hall for which we are grateful to EZA's XYL Jill, and very helpful assistant Raylene not to mention the other kind ladies who contributed so much hard work. I must also mention the President of the Triana District Council, Cr. McIlann, who kindly addressed our meeting and took a keen interest in our activities.

The following week-end many Zone Amateurs were actively engaged in the annual Jamboree-on-the-Air. 3ZK, 3ABJ, 3ATH and 3IB are known to have participated. At 3IB the station was set up in the local Guide Hall which is very well situated not far from the main town shopping centre. The station was active most of Saturday and Sunday, and a large number of Scouts, Guides, Brownies and Cubs thoroughly enjoyed the occasion. The only disappointment was the clash with the "CQ" contest which largely precluded satisfactory overseas contacts. Nevertheless many

fine inter and intrastate Jamboree contacts were made. This is the first time a Jamboree station has operated from Dimboola and the event attracted a large number of interested members of the public as well as some welcome publicity and photographs in the local press.

3ABJ is currently working on a phasing rig and hopes to join the sidebanders before long 5.v.l. Neil at Dimboola has revamped a t.v. tuner as a 2 mhz converter ahead of his Lafayette rx and is currently constructing a banan, so hopes to be to copy some of the v.h.f. boys soon. Neil hopes to sit for his ticket in the near future. 3IB still suooing the DX hands and recently hooked 8P4 and V35 in bring the DX countries score to 149. 28 Mc observed to be opening to W and JA DX the past few week-ends. Chas 3IB acknowledges a backlog of several hundred QSLs for VRIIB activity, but hopes to tidy these up by early in the New Year, a move-ment of QTH earlier in the year interrupted these activities. 73. Chas 3IB.

SOUTH AUSTRALIA

The monthly general meeting of the VKX Division for October was held in the club rooms to a good roll-up of members, and took the form of a lay-out. Very little official business took place, in fact when one looks back on the evening, very little took place at all, and after the distribution of QSL cards was disposed of, and a short smoke-on took place, the meeting was handed over to the gentlemen in charge of the buy-and-sell—none other than Brian 5CA and Phil 5NN. For the first time in the long history of such nights, very little was offered for disposal and despite the valiant attempts of several members of the audience to keep the night on its feet, it finally expired with a gasp at the unheard hour of 9.40 p.m. A number of members stayed behind to natter and exchange ideas, but the vast majority having absorbed the lethargic conditions existing at the meeting, lustily left for home, giving their families the shock of their lives, causing

several XYLs to wonder as to whether they should call the doctor or wait until the morning.

Opportunity was taken at the meeting to welcome back Bob 8FD, ex Georgia Tech, who has returned to VKX after his sojourn in W. land. He looked fit and well, and settled in at the meeting in such a manner that it did not seem that he had been away at all. I meant to ask him as to his proposed QTH, the rumours have had him in residence in the area of Geoff 5TY, but I believe it will be Kensington. RIGID Bob?

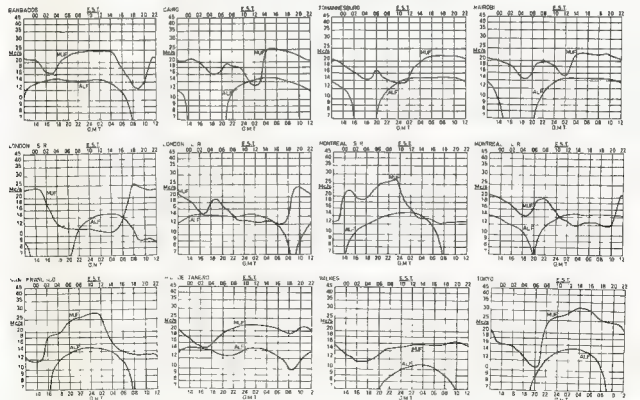
Sat next to Brother John 5VG, better known on the air as Griff, at the meeting and was cut to the quick when he told me that he has been nominated for the W. S.A.B. Club despite the fact that he is still an a.m. man. I gave him the Gypsey's warning as to what would happen to those who desert the cause for "The Thing," but I don't think he was very impressed. Anyway, I will keep an ear on him. Little does he know that I jammed his Sunday morning sked with Ross 8DA on 14 Mc—now wait a minute, is it Sunday morning, afternoon, or night? Oh dear, oh dear, I might miss something.

Wiccan was represented in the recent E.F.S. Bushfire Clean-up Week Procession the other Saturday. The vehicles were those of Trevor 5Z15 and Geoff 5TY, being accompanied by John 5KK, Brian 5CA, Howard 52BK and the old reliable George Edmondson. Both vehicles were suitably decorated with signs drawing attention to Wiccan, as well as with anti-bushfire slogans, to say nothing of an abundance of armbands, in fact they were later described as resembling a couple of enraged porcupines.

Regarding the above paragraph, was more than pleased to hear Geoff 5TY when describing the procession to the meeting, give George Edmondson a pat on the back for his undying enthusiasm in the cause of Wiccan. George is one of those retiring, self-effacing hard workers who can always be relied upon at all times for that little bit extra when needed. You'd do us George—keep up the good work.

John 5KK, complete with number one son, noticed at the meeting and from accounts the said son is showing signs of being keen

PREDICTION CHART FOR DECEMBER 1966



(Prediction Charts by courtesy of Ionospheric Prediction Service)

Clem SCW, who has been enjoying codies of long service leave had quite a busy week-end recently. At a Boy Scout function, in which the Institute was invited to participate, Clem and a few stalwarts erected and operated a typical Ham station. Among those responsible were Norm NS, Graham EZEZ, Laurie EZEA. There were others, too, no doubt, but my memory is not serving me too well. Just as well, too, or I might remember the name of the shocker who took one of a hundred yard reel of wire in his teeth and shinned up a near-by pole in order to anchor one end of the long wire antenna. The fact that the aforementioned pole was one belonging to the S.E.C. and was adorned by a street light, and furthermore was located in Canning Highway is neither here nor there. The rig was housed in a tent and included a KWM2 and a 6 mX rig working into a ground plane. The KWM2 worked into the long wire and also on occasions, into a nearby p.a. system, thus greatly mystifying a bewildered stall holder who henceforth regarded his microphone with great suspicion. Also available in the tent were a number of records extolling the virtues of Ham Radio and the Youth Radio Scheme. Well done, sirs, well done.

I think that in all fairness the VK3 Division should be warned that an invasion seems most likely to occur about the latter end of this month. Those involved are 6AQ, 4ZF, 3YQ, 6YB, 4EP, and they plan to descend on the unsuspecting city like a pack of—err, Hama, for a couple of weeks, too, mark you! Will someone please advise VK3 cause I can't be sure that they will read these notes. Thanks.

Aswel Audio Phaseshift Networks

Further quantity available
Price \$8 including postage

ASWEL

17 Clisdell Ave., Canterbury,
N.S.W. Phone 78-5368

"WIND UP" TOWERS

57 ft. to 100 ft., rotators, special aerials
for u.h.f. and v.h.f. frequencies.

Write to

ANTIFERENCE (AUST.) PTY. LTD.
P.O. Box 49, North Brisbane, Q'land

Repairs to Receivers, Transmitters;
constructing and testing; xtal conv.,
any frequency; Q5-ers, RS-ers, and
transistorised equipment.

ECCELESTON ELECTRONICS

146a Cutham Rd., Kew, Vic. Ph. 80-3777

Stockists of Radio and Electronic
Components for the Amateur
Constructor and Hobbyist

First Ring, Write or Call on

WILLIAM WILLIS & Co. Pty. Ltd.
430 Elizabeth St., Melbourne. Ph. 34-6539

Universal L.T. Transformer

Six windings: 3v./1.5a. each (3a. max.
per winding). Amazingly versatile,
\$3.50, post free. Also available: Many
good technical books at reasonable
prices. S.a.c. for list.

AUSTRALIAN ELECTRONICS

76 View Street, Hobart, Tas.

Another of my DX type sples reports that
John GMLXV, ex VKXJJ, is treasureing fond
memories of his recent five-year stay in this
fair city and plans to return very soon.
May I take this opportunity, on behalf of
the VK3 Division to wish you, one and all, a
Very Merry Xmas and a Happy New Year.
TJ, Rose HDA.

TASMANIA

Following the recent elevation of Terry TCT
to the rank of life membership, a little further
investigation took place into the records and
it was discovered we had on our books an
almost forgotten member who had appeared to
eclipse that of Terry. This member's details
went something like this: A Councillor for 15
years, commencing back in 1907, QSL Manager
3 years, Publicity Manager 1 year, Vice-Pres.
3 years, Traffic Manager 1 year, R'st Officer
for 4 years, President for 1 year, member
of the Distribution Committee for 3 years, and
Lecture Officer for the last 12 months. The
said gent (and who could call him anything
else) appears to have been a very busy fellow
since 1937, excluding the war years, which
seems a pretty good record, and as prompted
him TZE to propose Tom TAL for life membership.
TZE was a fellow who had been a long time
member who could not say, "Congratulations
'Uncle Tom'!" If anyone deserves this honour,
then you've got it. However, don't let me go to
your head, we aren't going to pension you off yet,
you're good for a few more years in some
position. What about DTY? Correspondent for
instance—or Secretary even!

This year's Jamboree was without a doubt
our best ever effort, a total of 45 Scout Groups
were catered for, and I feel this is indeed a
credit to all who took part. Do you realise
this is three times the Australian average
based on population. Congrats to VK7, we
may be the smallest Division in numbers, but
we certainly aren't in participation, a most
commendable effort indeed, of which we can
feel justifiably proud.

At the time of writing the Hamfest is four
weeks away, but by the time you read this,
if you do, it will be over by about a week,
but if preparation was any good, it should be
a beaut this year. All I can say at the moment is,
"I hope I saw you there, and you'll see me again next year."

The Hamfest might be over, but the v.h.f.
season is just starting, and it gets away this
year with the "Rosa Hull" Contest, commencing
on Dec. 7. Remember, it's your best seven
days that count, and as I've said before, you
don't count a bumper if you don't get your
log away.

We should have a "Kiwi" visitor in the
State over the holiday period. My spile tell
me that ZL1NH will be touring the State. I
don't know of any other visitors at this stage,
but I've no doubt there will be quite a
number coming to see the best place in the
Commonwealth. To those who are coming,
may I remind you to bring your Call Book.
It has got the addresses of most licensees in
it, and make yourself known wherever you
are. I'm sure you will be shown the renowned
"Tasnie Hospitality."

Speaking of holidays, I'm going to have one
myself this Christmas for a change, normally
it's a mid-winter job for me, but it has
been planned what's got to be done—might
get a better rest if they were in winter time
again, and one less to do.

As this will be the last you'll read of my
piffle for the year 1966, may I take this opportunity
of wishing any readers, on behalf of the
President, Council members, and the VK3
Division, a Very Merry Xmas, a Bright and
Prosperous 1967, and in fact all the things
you wish yourselves. TJ, Geoff TZAS.

HAMADS

Minimum 50c, for thirty words.
Extra words, 2c each.

Advertisements under this heading will be
accepted only by Amateur Radio S.W.I. The
Publishers reserve the right to reject any
advertising which, in their opinion, is of a
commercial nature. Copy must be received
at P.O. Box 36, East Melbourne, U.S. Via
by 5th of the month and remittance must
accompany the advertisement.

DUE to withdrawal of loaned gear, Cessnock
Youth Radio Club would like to beg, borrow,
or buy very reasonably a Communications K
portable in 1000 Secs. TJ Aberdeen Rd.,
Cessnock, N.S.W.

ESTATE the late VKZADC. Gordon McLeod
was constructing a copy of the Collins KWM-2
Transceiver, including an exact duplicate of
the chassis, 355-3, with its d.c. mechanical parts.
All components, all brand new, including
switches, relays, Collins mechanical filter, etc.,
are there, now sorted out, chassis construction
remains to be undertaken. Anyone interested
to complete the project, contact VK2VAA. The
lot is available for \$250, Aris Bliss, VK3VAA,
P.O. Box 22, Springwood, N.S.W.

FORD Falcon De Luxe Sedan 1961/2, beautiful
condition, been under wraps all this
year, surplus to requirements. Anyone
interested, call 335-3 or 3, a.s.u. and exchange
in mint condition, or sell \$750. VK3ED, Phone
787-1497 (Melb.).

FOR SALE: Going a.s.u., must sell. Halli-
crafters HT40 TX, 75 watts a.m./c.w., 40 to 6
metres, \$100. 240/120 v. 500 watts
down transformer, \$10. Heathkit VF19 v.o.,
30 to 10 metres, \$10. Heathkit HP20 power
supply, 150 watts at 600v, 300 mA, or 600v, 120
mA, and 800v, 100 mA, plus 120v, 30 mA,
0.5v, 11 amp, or 12v, 5 amp, \$20. Heathkit
HR20 Rx, a.s.u., 30 to 10 metres, \$85. Leader
5.14 100 watt transmitter, 40 to 600 c.s., Band
\$20. All equipment in good condition. Complete
with circuits and handbooks. Will sell
cheap. Call 344-1441, or best offer, VK3ABJ,
Moran, 34 Mont Albert Rd., Canterbury, E.T.
Phone 81-0321, Ext. 32.

FOR SALE: New National 1 pt Citizen Band
11 transistor Transceiver, Model RJ-15A, with
external Zephyr mic., write for more information.
\$85. Also 100 watt 100 c.s. Band
transistor Transceivers with separate built-in
speaker and mic. for telephone-like operation.
\$125. Sykes, 162 Bourne Rd., Sorrento, Vic.
Tel. 42374 after 5 p.m.

FOR SALE: One 345 watt 400 watt portable
Alternator including Villiers 4-stroke motor at
new. Suitable Field purposes, \$145. T,
Rodda, VK3ATR, 140 Scott St., Warrackna-
beal, Vic.

FOR SALE: 120 watt a.m. home-built Trans-
ceiver and switched v.o. and p.a. and
all 6144s, 600v. power supply, 150 watt sec
bias 80's modulator, good condition. Home-
built 5-band switched Receiver, 455 Kc. xtal
and 100 c.s. Bandpass filter, 100 c.s. Band
(Q'er), both with tubes. 455 Kc. Collins
mechanical filter and 3 crystals (never used)
and 100 c.s. Bandpass filter. 144 c.s. Band.
Quantity tubes, parts, etc. Offers for any or
all. W. Yates (VK3AWY), Box 434 Post Office,
Orange, N.S.W.

PANDA CUB, all band table top commercial
kit, 60w. c.w./60w. a.m., self contained with
in-built v.o. and power supply, \$80 or con-
siderable more for 144 c.s. Band. Receiver
VK3WD, Box 1912P, G.P.O., Adelaide, S.A.

SELL: Hy-Gain Model ETQ matched trap kit
for building 40 and 80 metre Doubles comprising
2 large end insulators, 2 40 mX traps plus
centre insulator and instruction manual. An
ideal and 80 metre set for conducting a good
contest. 144 c.s. Band. 144 c.s. Band. Cost
\$25 to land. Sell at \$18. Roth Jones, 1
Albert Rd., Melbourne, S.C.2, Vic. Tel. 28-8411.

SELL: Six Receivers, specially modified for
S.W.I. CR100 with manual, 4.25. R. & H.
Ham-bender (3 valves and 3 diodes), 4.25.
Ham-bender (3 valves and 3 diodes), 4.25.
Ham-bender (3 valves and 3 diodes), 4.25.
4.25. General coverage, 75 Kc. to 19
Mc. 4.25. S.W. 3 to 18 Mc. 10 valves and 3
diodes, 4.25. 144 c.s. Band. 144 c.s. Band.
stage, 10.0. Tuma 70 Mc. f.m. Carphone and
vibrator power supply, 35 valves (no crystals),
144 c.s. Band. 144 c.s. Band. 144 c.s. Band.
10.0. Aires 35v. Camera with three lenses,
normal, tele, wide angle. Astronomical Tele-
scope, 144 c.s. Band. 144 c.s. Band. 144 c.s. Band.
Tape Recorder or other equipment. H. Roach,
28 Foster Ave., Glenhumpy, Vic. 58-3757.

SELL: T.V. Chassis, new tuner, sync. and
sound good, no pix tube, 30c. Golese V.o.s.,
\$15. Woden UMS Mod. Trans., \$10. Also con-
siderable more. Offers or trade for antenna tower.
VK3WV, 453-2991 (Melb.).

SELL: 12 volt 300 watt Genetometer powered
by a 1 h.p. 4-stroke engine, \$65. Pyle Echo
Sounder, 12 volt, \$50. Phone 87-1930 (Melb.).

SWAP: As new No. 19 Mk. II. with manual,
for ARS. Cash adjustment if necessary. F.
Ward, WIA-12824, School Residence, Litch-
field, Vic.

WANTED: Woden UMS Modulation Transceiver,
E. R. Gray, VK3ZSH, 95 Atherton Road,
Portland, Vic. Phone 22-6529 (working hours),
26-3201 (after hours).

INDEX TO VOLUME 34-1966

ANTENNAE

An Indoor Pylon Slot Aerial for 145 Mc.	May p.11
Matters Mobile	Feb. p.3
Series Phased Array for 14 Mc.	Oct. p.4

AUDIO AND MODULATORS

Matters Mobile	Feb. p.3
Transistor Amplifier Design:	
Part One	Oct. p.5
Part Two	Oct. p.7
Part Three	Nov. p.9

BOOK REVIEWS

Mullard Voltage Regulator (Zener) Diodes	Sep. p.15
Technical Topics for the Radio Amateur	Jul. p.10
The Radio Amateur's Handbook	Jul. p.10
Transistor Interchangeability List	May p.17
1966 World Radio T.V. Handbook	Aug. p.12

CONTEST RULES AND RESULTS

Aust. Results of World-wide DX Contest, 1965	Oct. p.15
John Moyle National Field Day Contest:	
1966 Results	Jun. p.9
1967 Rules	Dec. p.11
Remembrance Day Contest: Corrections and Additions to 1965 Results	Mar. p.13
1966 Rules	Jun. p.12
1966 Results	Nov. p.18
Ross Hull Memorial Contest:	
1965-66 Results	May p.18
1966-67 Rules	Nov. p.17
VK-ZL-Oceania DX Contest:	
1965 Results	Apr. p.13
1966 Rules	Jul. p.13

INSTRUMENTS

An Experimental 100 Mc. Crystal Oscillator	May p.10
How is Your Dial Calibration?	Dec. p.7
Matters Mobile	Feb. p.3
Modifying the Palec Valve and Circuit Tester	Apr. p.2
Monimatch Mark 3 and 4	Feb. p.11
Self Powered C.w. Monitor	Jan. p.9
Simple Transistor Tester	Dec. p.3

MISCELLANEOUS

Amateur Radio Hall of Fame Announced	Oct. p.17
Australian DX Century Club Award	Jan. p.11
Australian D.X.C.C. Countries List	Jan. p.12
Australian V.h.f. Century Club Award	Jan. p.11
Boeing Demonstrates Meteorburst Communication	Jun. p.15
Central Queensland Branch Display	Jun. p.15
Father Xmas, Fairy Godmother, and all	Aug. p.11
"Fifty and Over"	Oct. p.14
Gateway of India Award	Feb. p.15
Great Circle Map	Feb. p.13
Higginbotham Award	Jun. p.21

Hints and Kinks:

Feeder Spacers	May p.17
Filed Information	Sep. p.11
Protective Cover for SO239 Connector	Jan. p.8
Lightning	Apr. p.15
More About Morse	Jan. p.7
P.A.C.C. Award	Jul. p.16
Project Australs	May p.14
Project Australs	Jul. p.11
Project Australs	Nov. p.21
Reciprocal Licence issued by U.S.A.	Jun. p.21
Standard Stations received in Far East	Jun. p.15
Sunspots and Predictions	Sep. p.14
Survey of Occupancy of H.F. Bands	Oct. p.15
Telepersonality—George Jacobs	Mar. p.6
The Radio Ham	Sep. p.20
"They and Me"	Sep. p.13
VK4AT might go on the Air	Aug. p.11
Further Notes on VK4AT's Power Supplies	Sep. p.7
V59MP, Maldiv Is.	Jun. p.11
W.I.A. Federal Convention, Easter 1966	May p.15
W.I.A. Federal President's Annual Report	Jun. p.17
YL Operator Club	May p.10
YO Awards	Oct. p.17
YO Awards	Nov. p.6

POWER SUPPLIES

Portable 240v. A.C. Power Supplies	Oct. p.3
Power Supplies for S.s.b. Exciters	Jul. p.9
Technical Correspondence: Diodes in Power Supplies	Sep. p.17
"The Mode of Power"	Dec. p.3
Transceiver Power Supplies	Dec. p.5

RECEIVERS

Accessory Package for Transceivers	May p.5
A High Stability V.f.o. for Receiver or Transmitter	Nov. p.6
A Pre-Amp. for 2 Metre F.M. Audio Clipper/Limiter for C.w./Phone Reception	Mar. p.9
Band Switched All-Triode Converter	Jan. p.3
Errata—Pye Reporter	Feb. p.12
F.E.T. Pre-amp. for 144 Mc.	Sep. p.13
How is Your Dial Calibration?	Dec. p.7
Matters Mobile	Feb. p.3
Netting with Transceivers	Dec. p.9
Noise Limiter for Mobile Use	Jun. p.5
144, 220 and 432 Mc.	Jul. p.5
Some Thoughts on Hang A.g.c. Systems	Jun. p.7
Some Thoughts on Six Metre T.v.i.	Aug. p.5
SX28 Receiver Modifications	Mar. p.2
Transistorised Amateur Band Receiver:	
Part One	Aug. p.2
Part Two	Sep. p.2
Part Three	Oct. p.11
Part Four	Nov. p.7
Two-Unit Pye Base Station Conversion	Jun. p.3
Your Pye Reporter—Tunable or Crystal Locked	Jul. p.2

SIDE BAND

A.m. Final as Linear Amp.	Sep. p.9
Bad Sideband Signals	Dec. p.9
Ceramic Filters for S.s.b.	Nov. p.13
Class A Amplifiers	Apr. p.11
Commercially Made Filters	Aug. p.9
Crystal Filters for S.s.b.	Aug. p.9
Drake TR-4 Transceiver	Sep. p.1
Linear Amplifiers (cont.)	Apr. p.11
Linear Amplifiers (cont.)	May p.13
Netting with Transceivers	Dec. p.9
Power Supplies for S.s.b. Exciters	Jul. p.9
Single Sideband—Power Measurements	Dec. p.6
Some Thoughts on Hang A.g.c. Systems	Jun. p.7
S.s.b. Transceivers	Jan. p.17
S.s.b. Transceivers (cont.)	Feb. p.15
Technical Correspondence: Diodes in Power Supplies	Sep. p.17
"The Thing"—Transistorised Transceiver Power Supplies	Nov. p.5
Transistorised S.s.b. Generator	Sep. p.3

TECHNICAL MISCELLANEOUS

Amateur Television Activities in South Australia	May p.3
Experimental F.M. Station for Victoria	Feb. p.17
Interference to Television and Radio Reception by Nearby Radio-Communications Tx's	Nov. p.2
Overlay Transistors	Feb. p.8
Some Low-Pass Filter Designs for Amateurs	Apr. p.9
The Fatal Current	Feb. p.9
Technical Correspondence: Transistor Amplifier Design	Oct. p.5
Author's Reply	Nov. p.15
V.h.f. Net Frequencies	May p.14

TRADE REVIEWS

Great Circle Map	Feb. p.13
Toroid Baluns	Jul. p.11

TRANSMITTERS

Accessory Package for Transceivers	May p.5
A High Stability V.f.o. for Receiver or Transmitter	Nov. p.6
An A.M.-C.W. Exciter for 144 Mc.	Apr. p.5
An Experimental 100 Mc. Crystal Oscillator	May p.10
Errata—Pye Reporter	Feb. p.12
Matters Mobile	Feb. p.3
Netting with Transceivers	Dec. p.9
Single Package Transmitter for 160 and 2 Metres	Jan. p.4
Single Sideband—Power Measurements	Dec. p.6
Some Thoughts on Six Metre T.v.i.	Aug. p.5
The 80 and 40 Metre "Transistor Special"	Sep. p.10
Errata	Oct. p.15
Transistor Amplifier Design:	
Part One	Sep. p.5
Part Two	Oct. p.7
Part Three	Nov. p.9
Two-Unit Pye Base Station Conversion	Jun. p.3
6/60 Special	May p.6

As Modern as tomorrow!



Yaesu FT-100 Transceiver

FIVE BANDS - BUILT-IN POWER SUPPLY - TRANSISTORISED

Combining all the features you expect in a modern s.s.b. transceiver, PLUS many more:-

THE FT-100 SSB-CW-AM Transceiver incorporates a selective ultra-modern six-crystal lattice filter designed to give excellent audio quality and an easy-to-tune signal. Use of transistors ensures reliability with low current drain (Receiver fully transistorised, approx. 500 mA.; Transmit standby, 2½ amp.; Transmitting, average 10 amp). Now you can operate portable with safety!

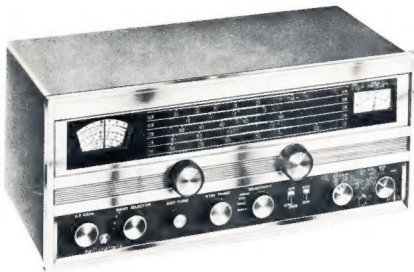
SELF-CONTAINED power supply is built-in, voltage regulated, can be used on 230v. a.c., 50 c/s., and 12v. d.c. simply by plugging in the special power cords provided. Makes mobile, portable or home station operation a dream.

FACILITIES: Selectable USB-LSB-CW-AM. Provision for external VFO, plus built-in facility of a minimum of four crystal-locked frequencies, and 100 kc. calibrator. Dial is similar to that used on the larger "F" Series equipment—precision gear driven type giving accurate linear tuning with 1 kc. readout. Exceptionally stable VFO, no warm-up. Frequency ranges: 3.5-4, 7-7.5, 14-14.5, 21-21.5, 28.5-29 Mc. Only valves used are transmitter driver 1 x 12BY7 and p.a. 2 x 6JM6 (similar 6DQ6). Rated at approx. 150w. p.e.p. input. Suitable for standard p.t.t. high impedance microphone. Dual "S" meter and p.a. cathode current, a.l.c., 10 kc. off-set tuning, variable antenna loading, antenna relay, 25 transistors, 32 diodes, 3 valves. Conservatively rated, heavy duty power transformer for best regulation and cool operation. Connections at rear for co-ax antenna line, power, speaker, VOX and linear control. Size 6" x 13" x 10½". Professionally finished in black enamel with white etched panel. Available early in the new year. **Price £299/10/0 (\$599), inc. S.T.**

Australian Agents:
BAIL ELECTRONIC SERVICES
60 Shannon St., Box Hill North, Vic. Tel. 89-2213

VK2 Rep: MOSMAN RADIO SERVICES
11 Ruby St., Mosman, N.S.W. Tel. 96-5342

NEW FROM HALLICRAFTERS



MODEL SX-130 GENERAL COVERAGE RECEIVER

The Hallicrafters Model SX130 Communications Receiver is a four-band superheterodyne receiver tuning 535 Kc. to 31.5 Mc. The frequency range covers foreign and domestic short-wave broadcasts, amateurs, aircraft, and marine band plus standard a.m. broadcasts. The receiver provides for the reception of c.w., a.m. and s.s.b. signals over its entire tuning range, the upper or lower sideband being readily selectable by means of a front panel control. This feature greatly simplifies tuning of s.s.b. signals.

FEATURES INCLUDE:

- Calibrated electrical bandspread on 80, 40, 20, 15, 10 metres and citizen bands.
- Slide-rule bandspread dial.
- Crystal filter.
- Product detector for c.w. and s.s.b.
- Antenna trimmer for maximum signal transfer.
- Front panel controlled automatic noise limiter.
- New handsomely styled cabinet.
- Audio power output—2 watts.
- "S" meter for accurate tuning.
- Calibrated b.f.o. for u.s.b.-l.s.b. c.w.

FRONT PANEL CONTROLS

R.f. gain, band selector, antenna trimmer, crystal phase, selectivity, noise limiter on/off, a.m.-c.w./s.s.b. selector, b.f.o., audio gain, main tuning, bandspread tuning.

TUBES AND FUNCTIONS

One each 6DC6, r.f. amplifier; 6EA8, mixer and oscillator; 6EA8, 1st i.f. amplifier and xtal selectivity; 6BA8, 2nd i.f. amplifier; 6AL5, a.m. detector and noise limiter; 6BE6, b.f.o./product detector; 6GW8, audio amplifier; 1N3195, rectifier.

COVERAGE

Standard broadcast: 535-1610 Kc.; three s.w. bands: 1725 Kc. to 31.5 Mc.

Band 1: 535 Kc. to 1610 Kc. Band 2: 1725 Kc. to 4.7 Mc. Band 3: 4.5 Mc. to 13.0 Mc. Band 4: 11.9 to 31.5 Mc.

EXTERNAL CONNECTIONS

3.2 ohm speaker and standby terminals. Terminals for single wire or double antenna, a.c. cord, audio output terminal, "S" meter electrical adjustment. Phone jack on front panel.

W.F.S. ELECTRONICS SUPPLY CO.

227 Victoria Road, Rydalmere, N.S.W. 638-1715

ATLANTIC RADIO

36 Oxford St., Woollahra, N.S.W. 31-7811